THE ARCHITECT & BUILDING NEWS

15 NOVEMBER 1956 · VOL. 210 . NO. 20 · ONE SHILLING WEEKLY

- OLYMPIC SWIMMING POOL
- ALDENHAM L.T.E. WORKS
- PLANNING III

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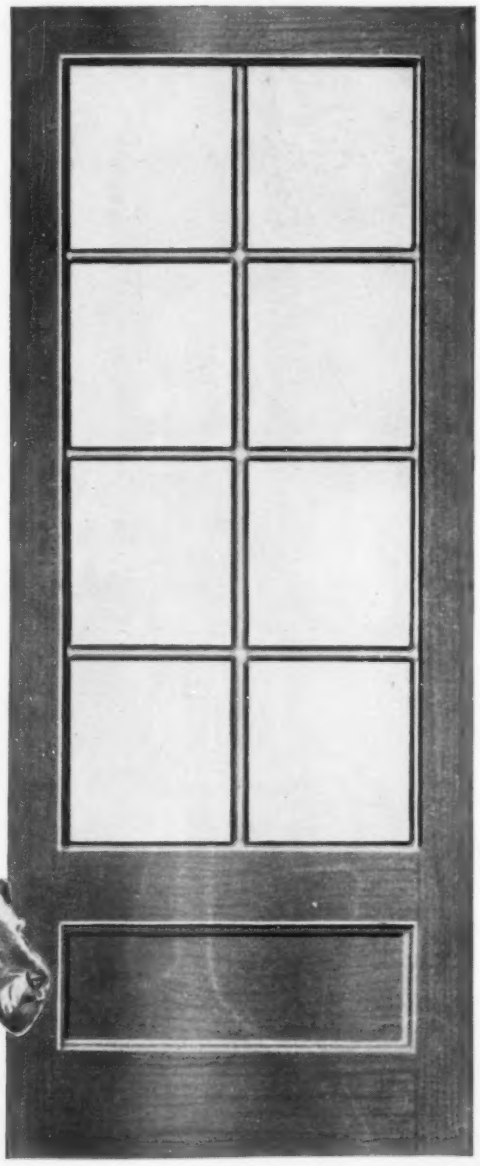

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2. They can be laid without any concrete bedding or haunching, and can be cut and machined on site where necessary. Moreover, they are so light that one man can easily carry 32 ft. of piping.

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save time and money

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(Pat. & Regd.) BRAND

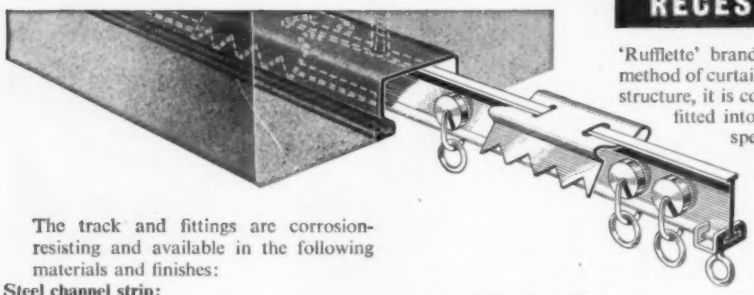
CURTAIN TRACK SYSTEMS

'Rufflette' Brand Tracks have been installed by many local authorities including Ilford, Wandsworth, Lewisham, Willesden, Finchley, Wood Green, Poplar, Wimbledon, Greenwich, Stoke Newington, Islington, Holborn, Leyton & West Ham Borough Councils. Also London, Bucks, Surrey, Middlesex & Essex County Councils.

Cubicle Track installations have been made for many hospitals including Edgware Gen., Mount Vernon, Richmond, Bushey Maternity, Northwood & Pinner Gen., Liverpool Stanley, East Suffolk & Ipswich, Southmead Bristol, Newcastle Gen., Darlington, Warrington Infy., and the Liverpool Royal Infy., and also for many municipal undertakings.

SEE OUR PERMANENT EXHIBITS AT THE BUILDING CENTRES IN LONDON AND GLASGOW

RECESSED CURTAIN TRACK



'Rufflette' brand Recessed Curtain Track is the most perfect method of curtain suspension ever devised. An integral part of the structure, it is concealed, permanent and inexpensive and can be fitted into wood or plaster lintels. Many architects have specified this product in new buildings.

'Rufflette' brand Recessed Curtain Track has been developed to meet the demand from architects, builders and contractors, for a permanent built-in curtain suspension system. It eliminates the risk of damage to ceiling and wall surfaces when tenants fit their own rails.

The track and fittings are corrosion-resisting and available in the following materials and finishes:

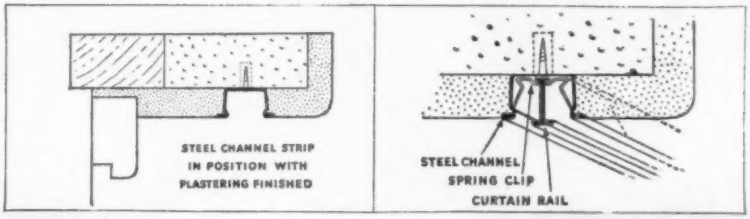
Steel channel strip:
Zinc plated and lacquered.

Patented spring clips:
Solid spring bronze.

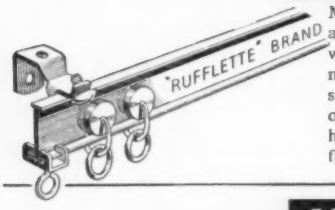
Curtain track:
Solid brass or aluminium alloy.

Runners:
Brass, nickel-plated.

End stops:
Pressed steel, brassed or zinc-plated.

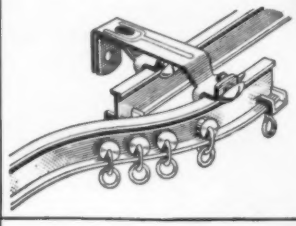


CURTAIN TRACK



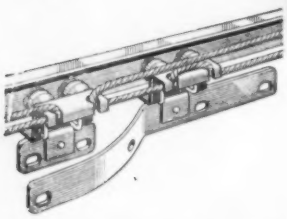
Made in brass or aluminium and suitable for all types of windows. Fixing brackets are made for top or face fixing, saving valuable time and cost on the job, and track is rigidly held in position by a single front-facing screw.

OVERLAP BRACKET



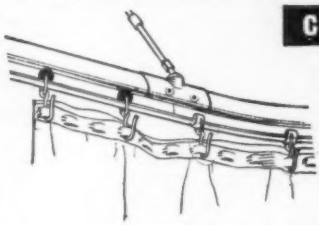
When cord-control is not used, curtain track can be cut and overlapped in the centre using the special BL7 bracket. This bracket fits over the standard fixing bracket, both being held in position by a single screw.

CORD CONTROL



Curtains can be effortlessly opened and closed on straight track with 'Rufflette' Cord Control. Wheeled master runners with a curved arm enable curtains to be overlapped without cutting track, thus avoiding the usual unsightly gap when curtains are closed.

CUBICLE TRACK



The simplest and best method of partitioning space by curtains. Suspension is from ceiling or wall, floor space being unobstructed, and silent runners make the operation of curtains almost inaudible. For hospitals, schools, hairdressing establishments, clinics and stores.

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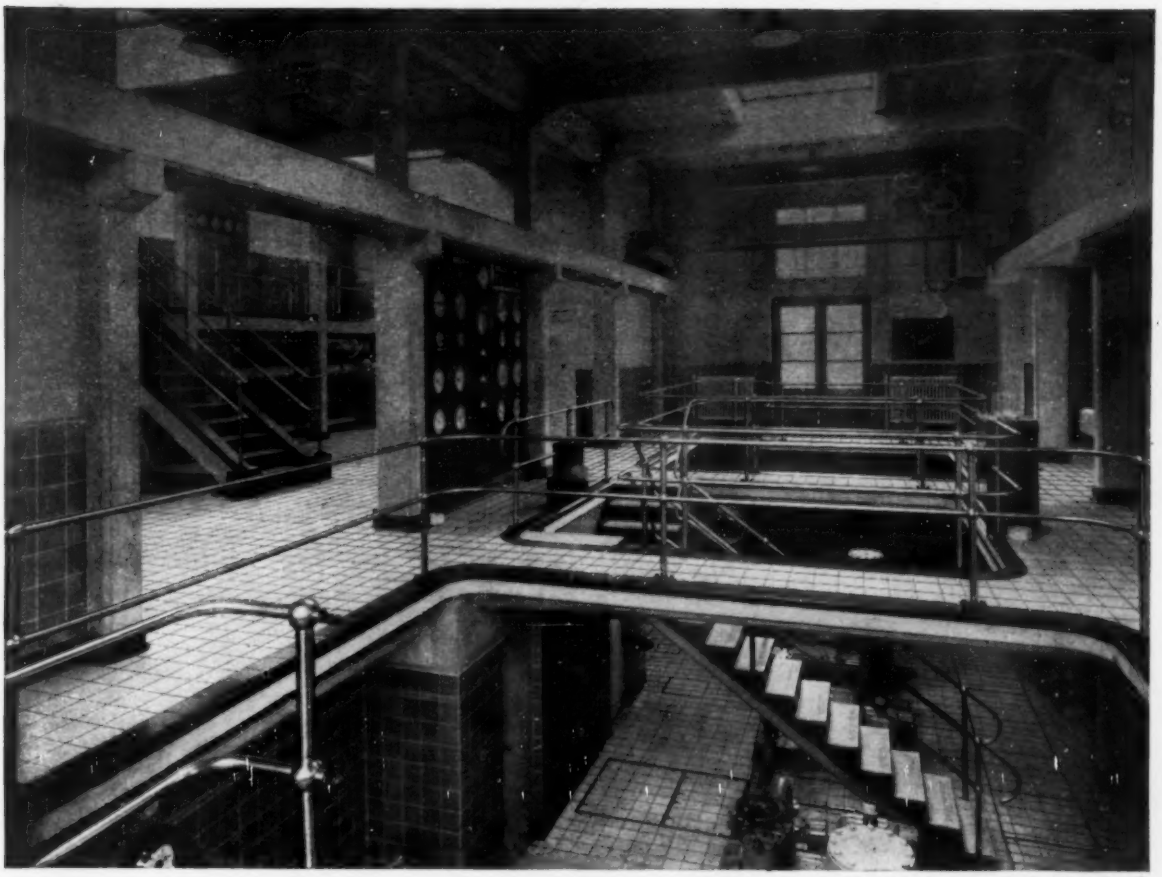

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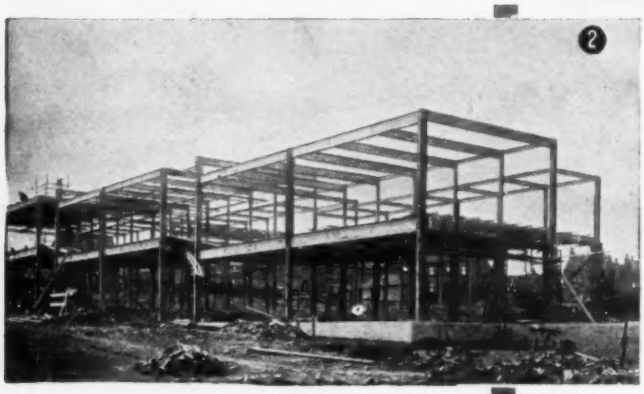

1. New factory building for Messrs. William Cooke & Co. Ltd. of Rotherham. 300 ft. x 120 ft. span.
2. The County Primary School, Crosland Moor, Huddersfield.
3. College of Further Education, Grimsby, in course of erection. STAGE 1.
4. The completed College. STAGE 1.

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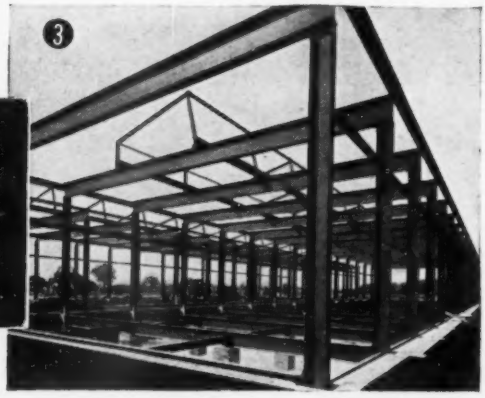

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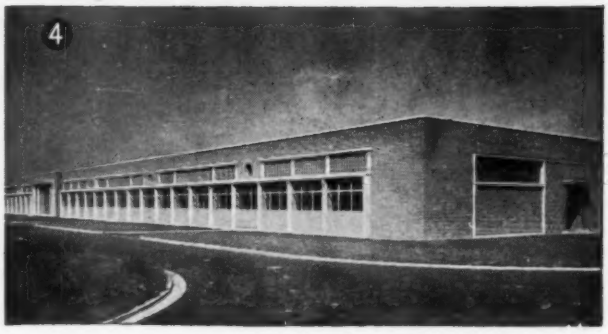

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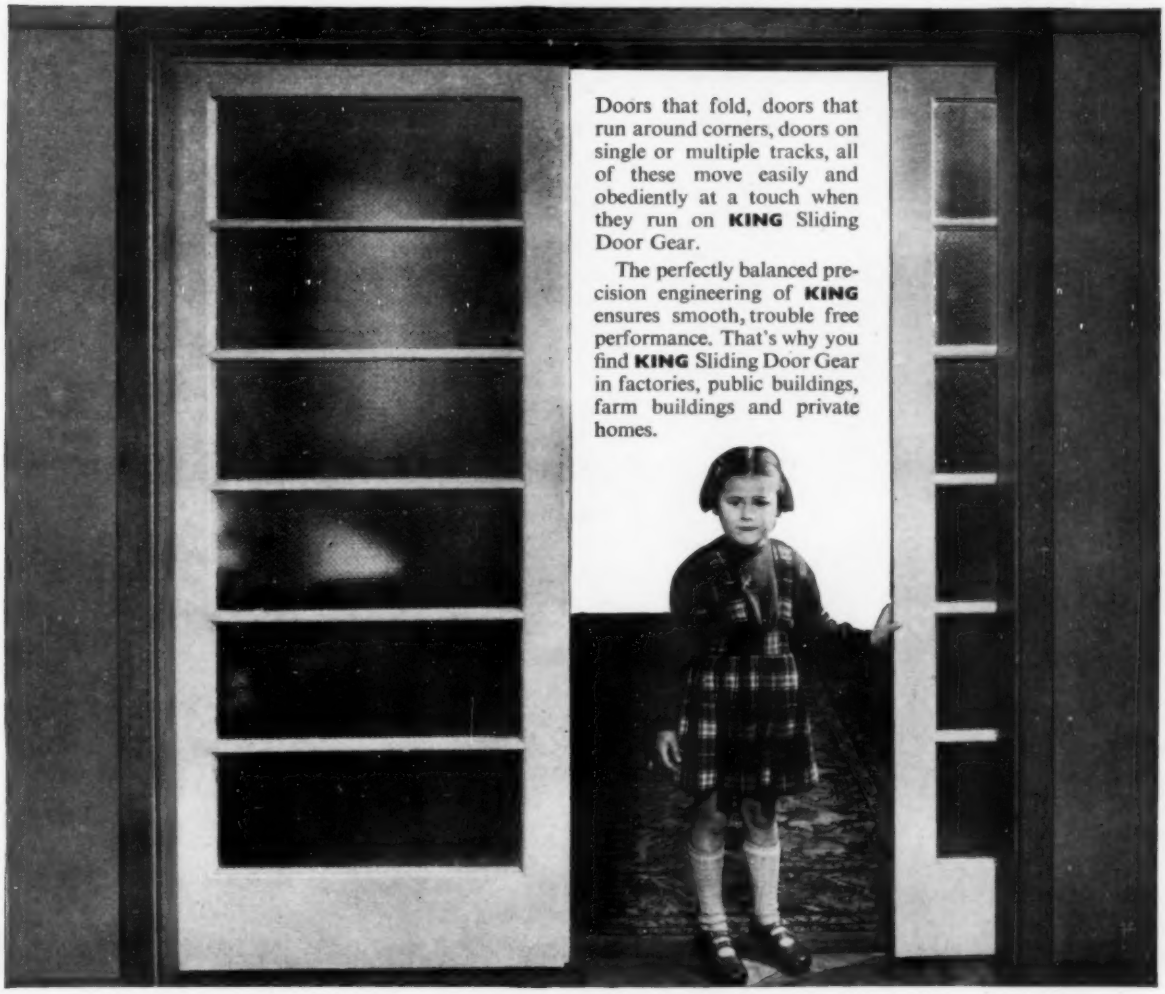

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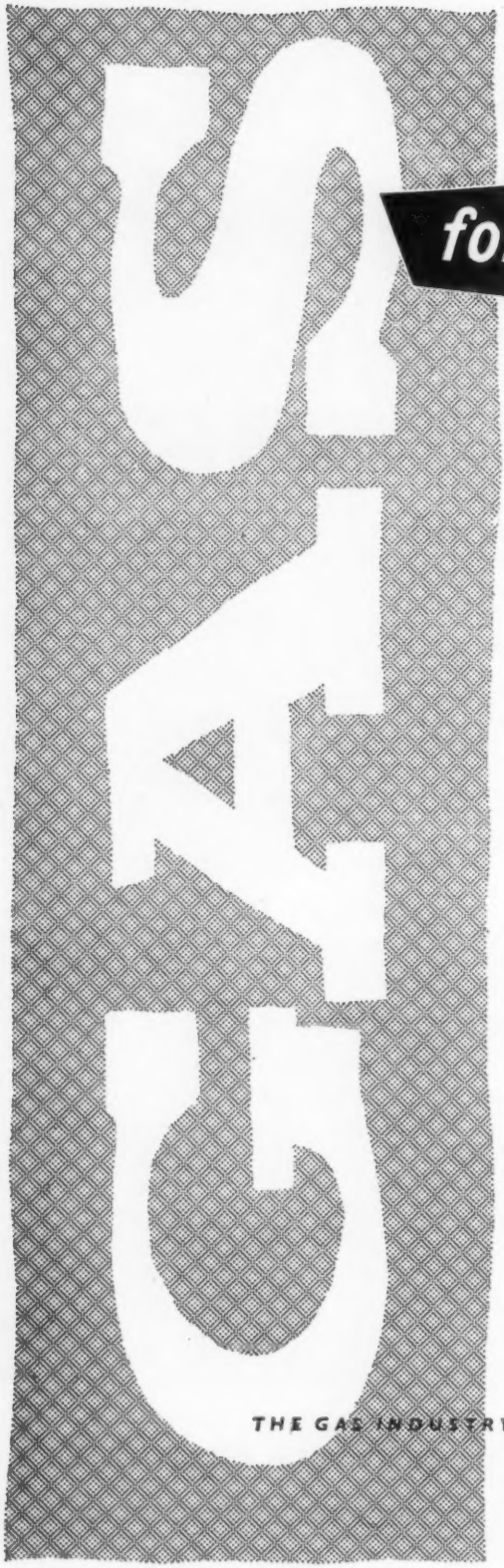

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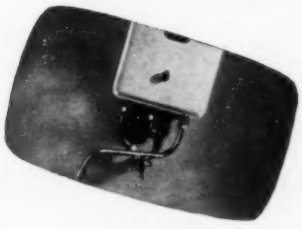

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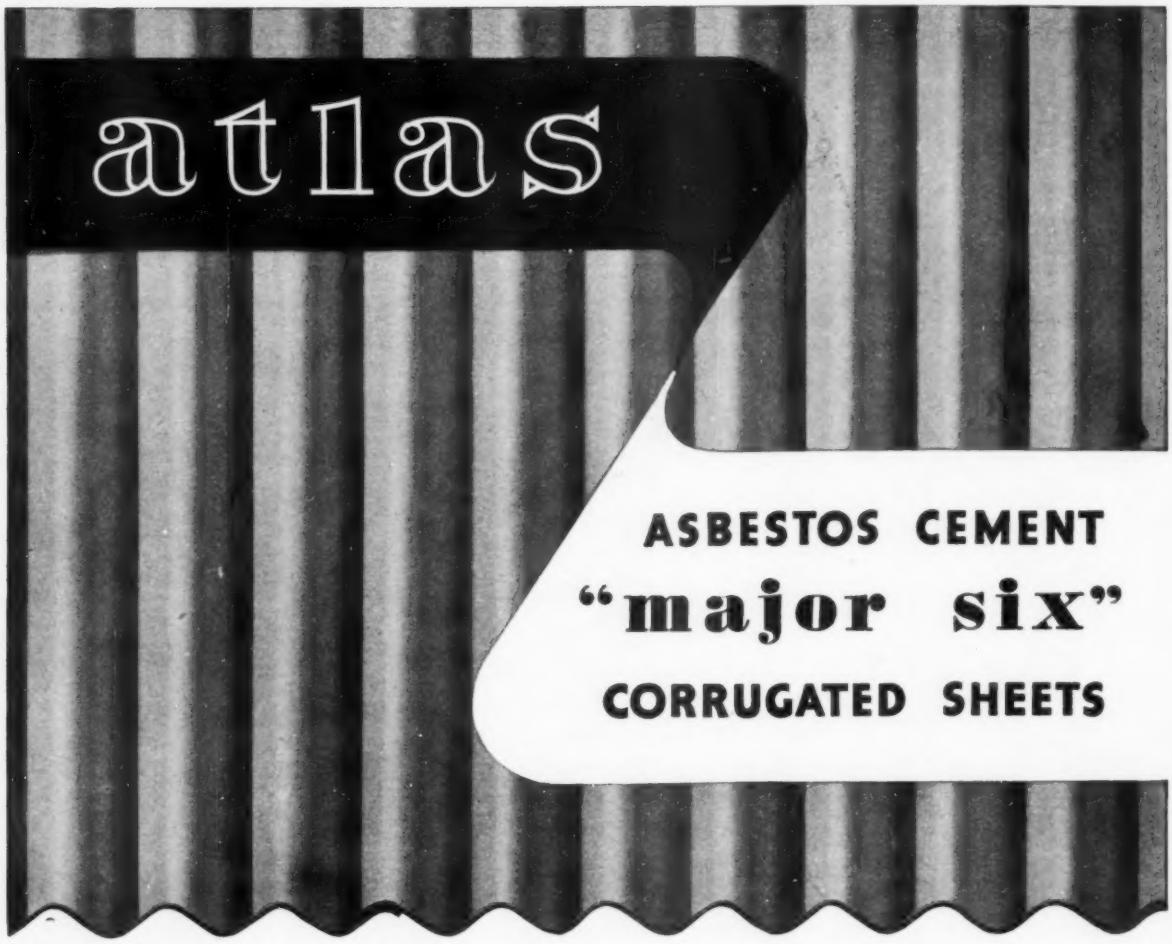
THE GAS INDUSTRY MAKES THE BEST USE OF THE NATION'S COAL



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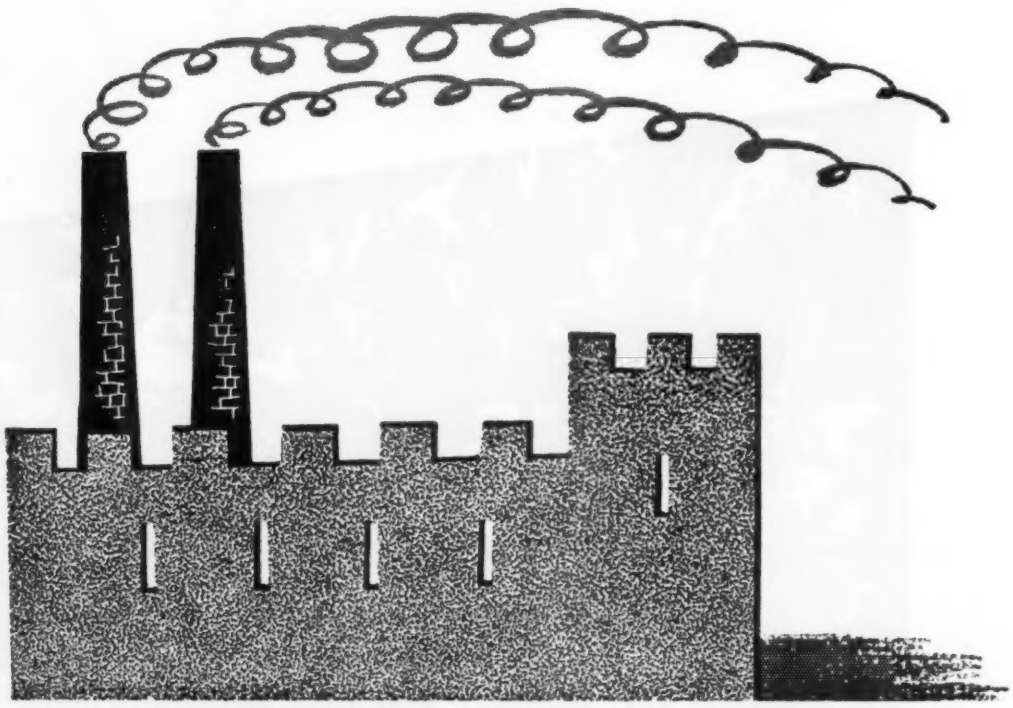

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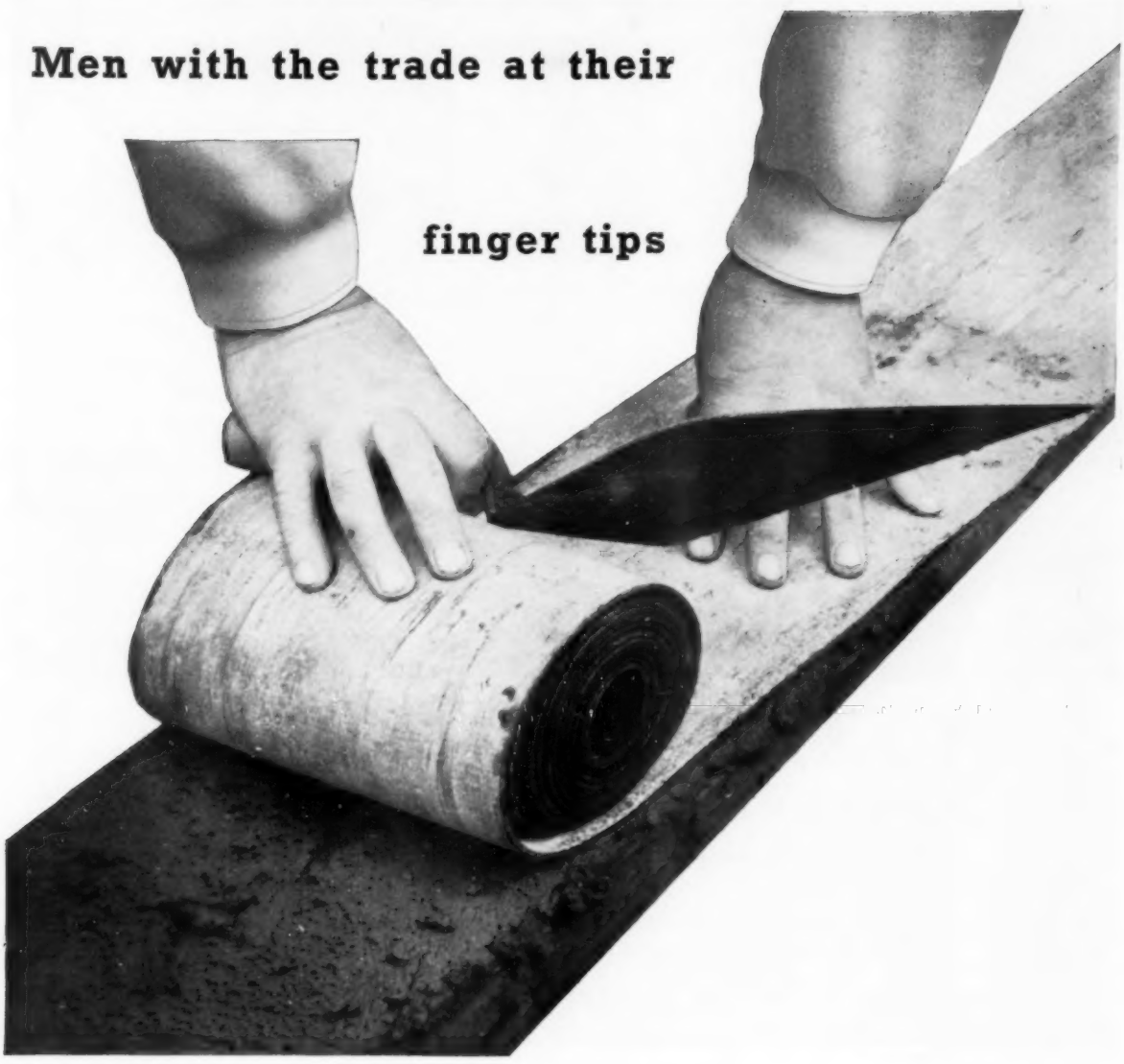

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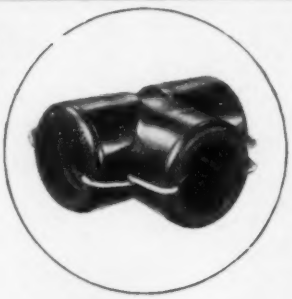

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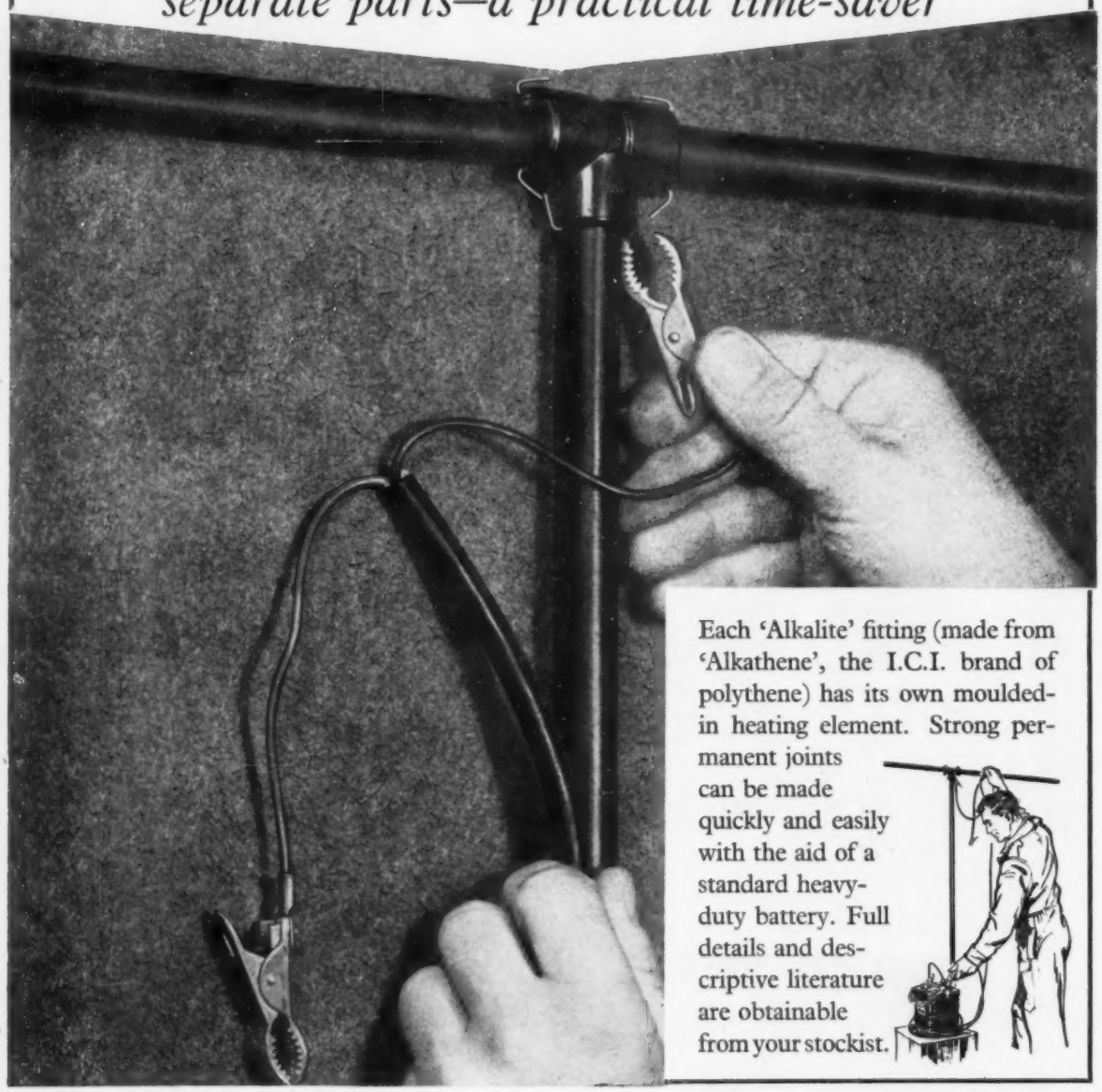

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APPROVED BY THE FIRE OFFICES COMMITTEE

Model 1301 Universal (Royal Navy) Extinguisher.....FOC Ref. No. 104/6 for Class A fire risks (*fires involving wood, paper, textiles and other carbonaceous substances*).

Model 1400 Air Foam Extinguisher.....FOC Ref. No. 104/3 for Class B fire risks (*fires on petrol, greases, oils, paraffin, white spirit and diesel oil*).

Model 1003 Auto (CTC) Extinguisher.....FOC Ref. No. 104/5 for Class C fire risks (*minor electrical risks and small petrol fires*).

Model 2003 Auto (Chloro-Flash) Extinguisher.....FOC Ref. No. 104/7 for Class B & C fire risks (*extra-hazardous fires involving spirits, alcohols, organic solvents and electrical equipment*).

All these models comply with British Standard specifications, where these exist. No British standards exist for chlorobromomethane extinguishers or double-action nozzles like that of the Universal extinguisher. But special FOC approval has been given to these Nu-Swift features because of their increased efficiency.

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(British Standard Code of Practice C.P. 402.401 (1951) is published on behalf of the Council for Codes of Practice for Buildings by the British Standards Institution.)

Universal (Royal Navy) Extinguisher Model 1301 for .. Class A fires
Air Foam Extinguisher Model 1400 .. .. .. Class B fires

ACCEPTED BY THE LONDON COUNTY COUNCIL

Consent granted under Sec. 20 of the London Building Acts (Amendment) Act 1930.

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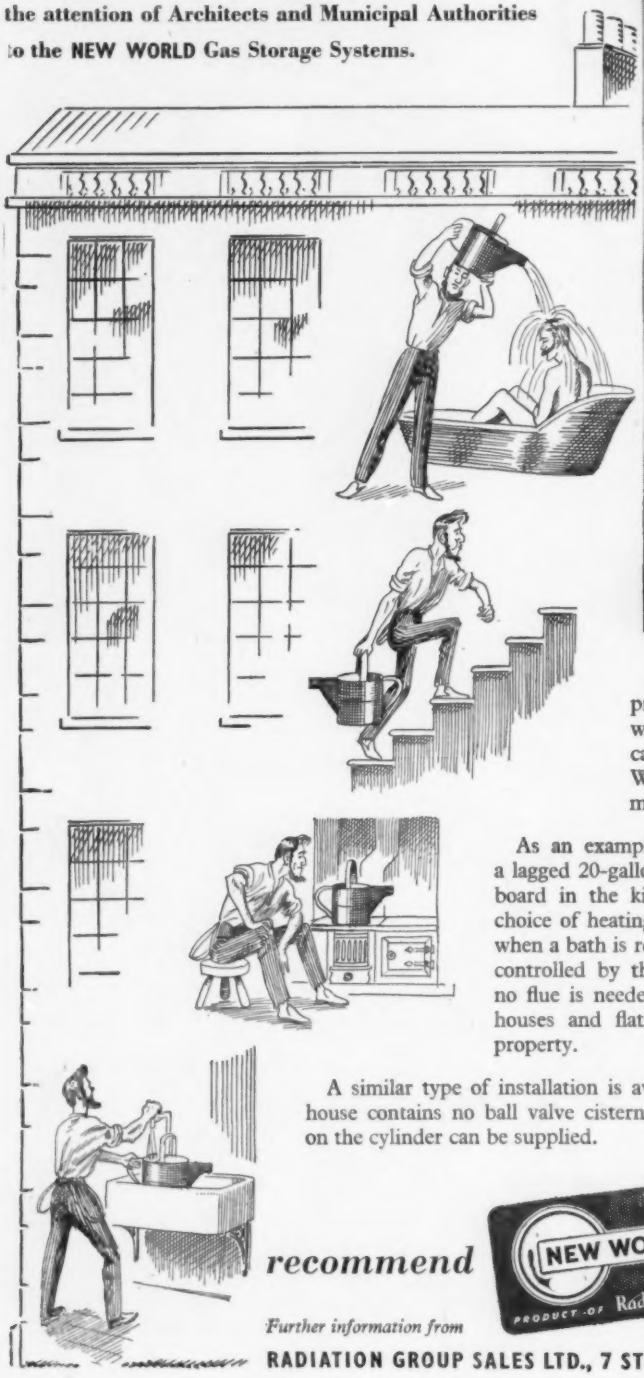

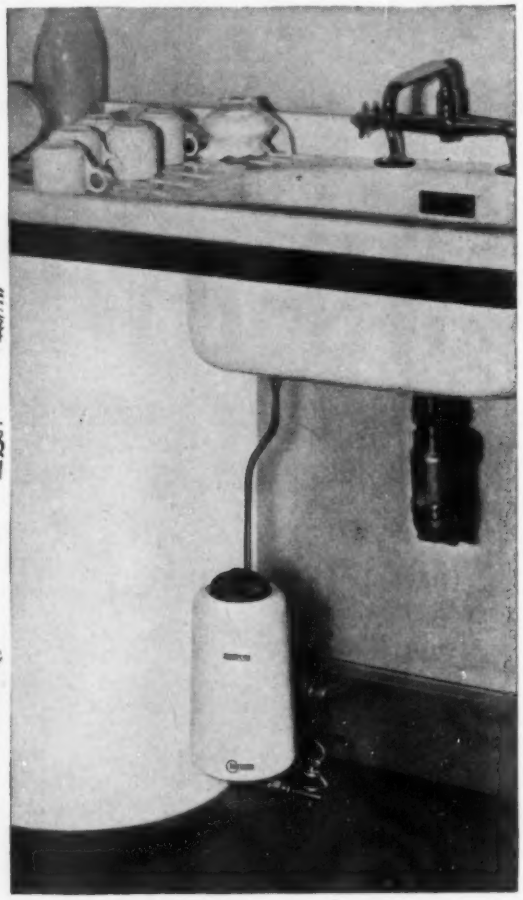

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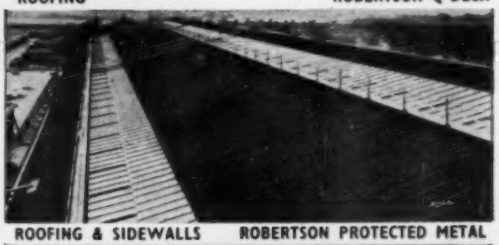
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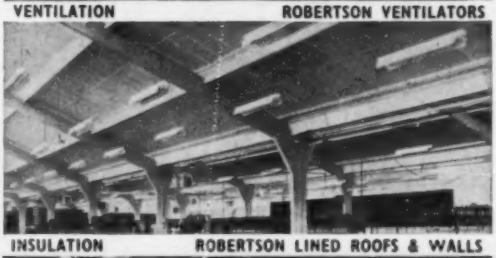
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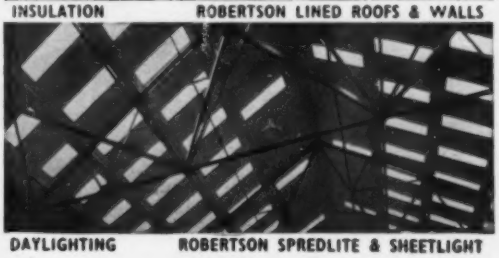
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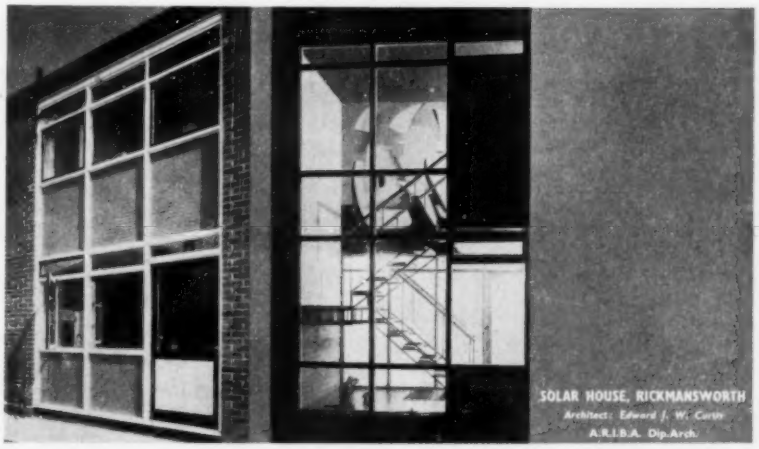

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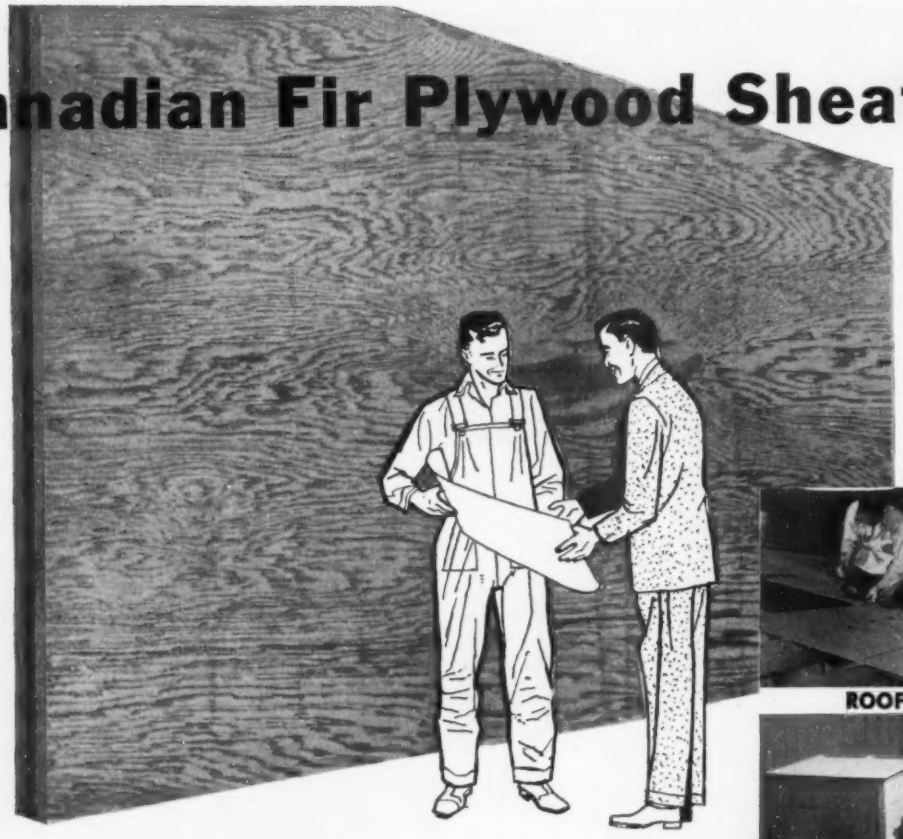

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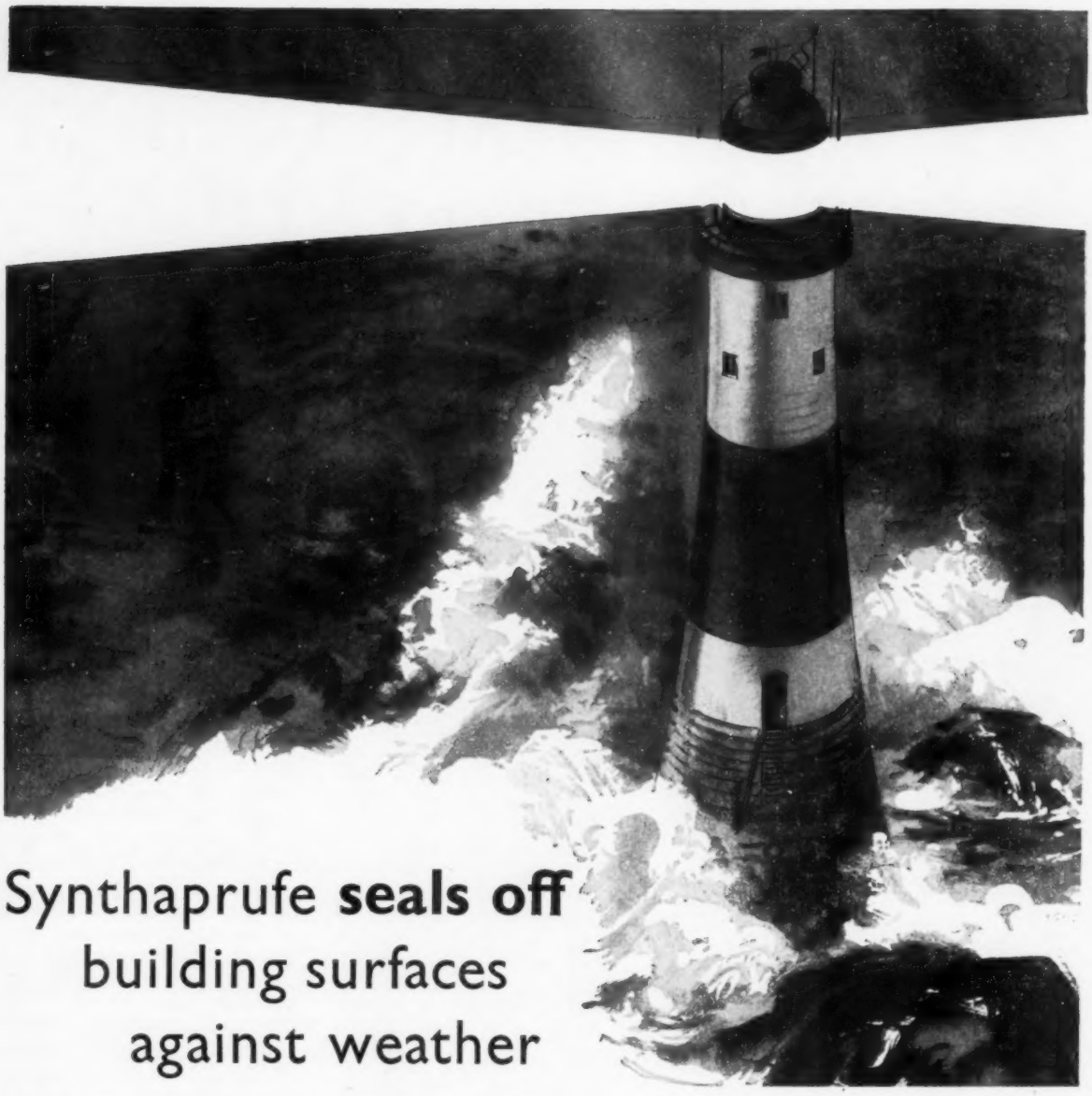

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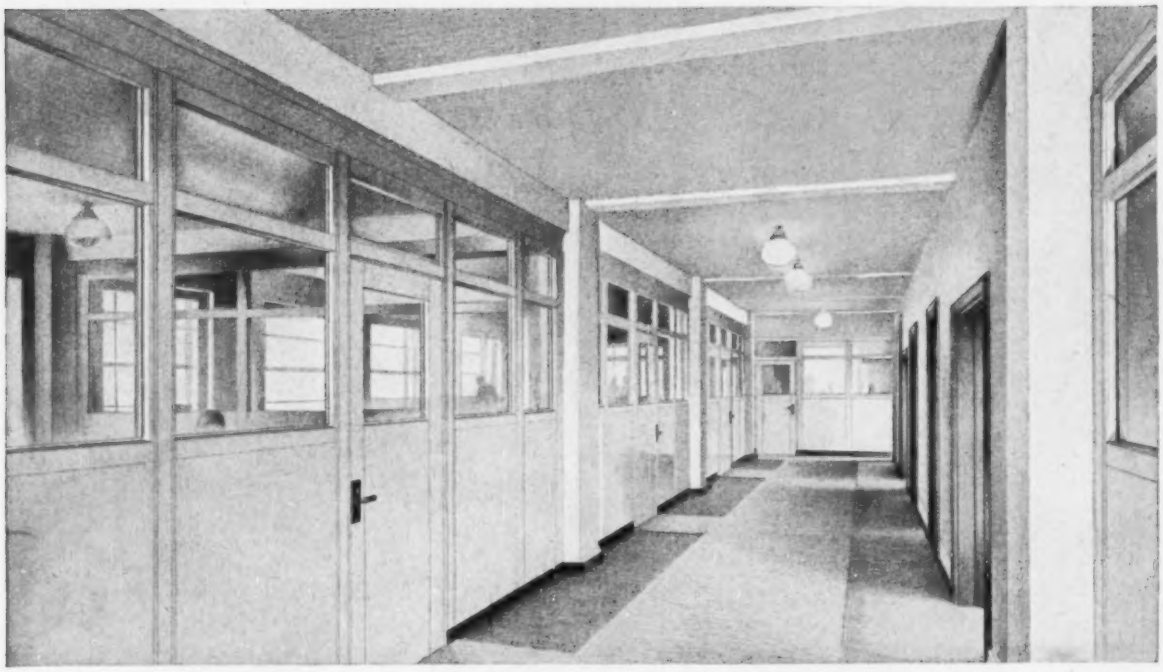

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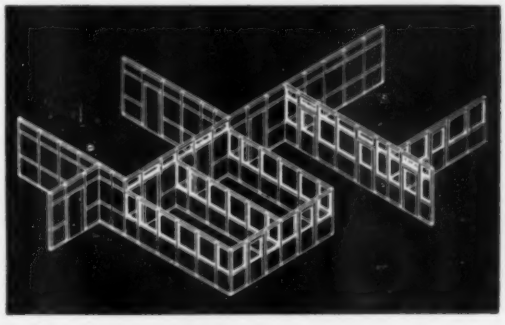

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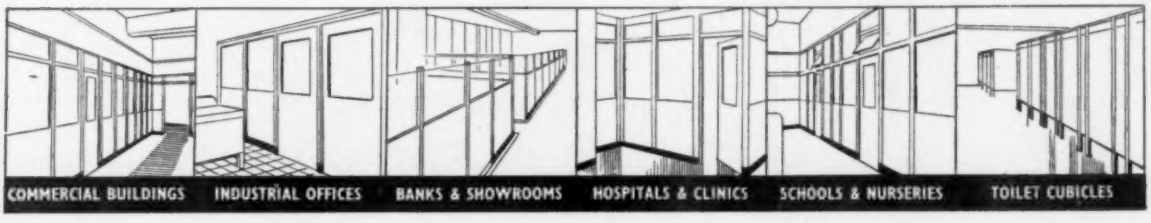

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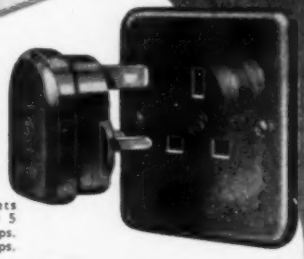

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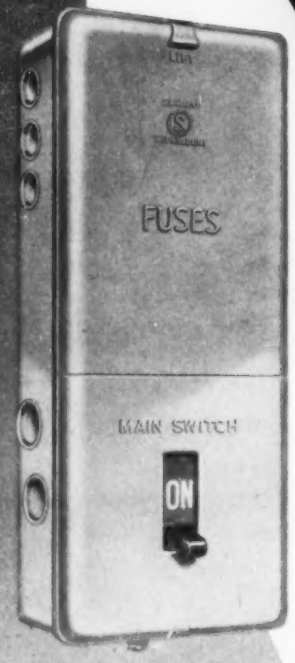

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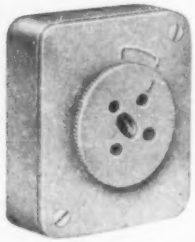

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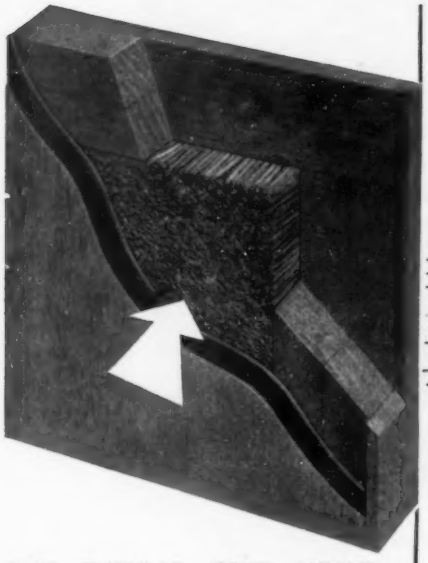

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Vol. 210 No. 20

THE ARCHITECT & BUILDING NEWS

November 15 1956

The "Architect and Building News" incorporates the "Architect" founded in 1869 and the "Building News," founded in 1854. The annual subscription, Inland and Overseas, is £2 15s. 0d. post paid; U.S.A. and Canada $9.00. Registered as a Newspaper.

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A STEP FORWARD

LONG before the great departments of State obtained such persuasive powers as they enjoy today, it was thought right that, year by year, they should give to Parliament and people an account of their stewardship. How much more important is that duty today when these departments exercise such important and often arbitrary processes. Important though that duty may be it is one which the Ministry of Housing and Local Government have successfully flouted for many years. Since the war we have been treated to a couple of compendious reviews covering four years or more, years in which vital changes have taken place. These infrequent reviews were necessarily incomplete. The first review, the Progress Report of 1951, was a document which, in view of wartime and post-war difficulties, was not unreasonable. The second review, issued last year, was as inexcusable as it was contemptuously inadequate. However, early last year the Minister of Housing told Parliament that he proposed to revert forthwith to the normal procedure of presenting an Annual Report. At a moment when many had begun to despair of its arrival there has appeared the first fruit of this promise.* It should at once be said that this present Report is a far better and more useful document than the last Report.

The responsibilities of the Ministry of Housing are as onerous as they are unenviable, ranging over many difficult and intricate matters. These matters include Local Government organization and development, the supervision and direction of Town and Country Planning, Housing in all its aspects and the management and provision of water supplies and sewerage systems. To give an adequate account of all these matters within a reasonable compass is no easy task. There are two aspects to the job. In the first place there is need for a conventional catalogue, a factual summary in words and figures showing the actual transactions of public business. This is the classic requirement of a departmental report. But this is not enough. The functions of the Ministry are such that they touch the lives of the great majority of people closely and in many ways. The nature of these functions is such that, to quote the Ministry's own words: "Failure to anticipate the needs of the future may create problems for future generations no less serious than those inherited from the past." Secondly then, there is need for some attempt so to knit together the knowledge and experience of today as to enable the reader to form a lively anticipation of "the needs of the future".

In its more conventional aspect this Report is the best catalogue the Ministry has yet given us. The main departmental responsibilities are described and, for the most part, a lucid and succinct account is given of work done in each field. Some sixty pages of appendices provide much useful information set out in tables and lists. As is almost invariable with Ministry of Housing publications, the effect is unnecessarily marred by the absence of an index. Generally speaking the detailed statistical information is as full as could reasonably be desired, yet in some cases more could usefully be given. It is not without significance that the missing information would often shed light upon operations for which publicity is not encouraged. For example, the tables which summarize the work of Rent Tribunals do not, among other things, give any details as to how the Housing Repairs and Rent Act 1954, has affected the Tribunal's work. Once again no figures are given for the purchase of land by agreement by local authorities. An absence of this information makes the figures given for compulsory purchase, much less significant than they might have been. But by and large the omissions are not numerous, and within its limits of space the Report will be of much value on the factual side.

Having set out most of the facts concerning the department's work during 1955, the Report still leaves an unsatisfactory impression in two respects. The first deficiency is a noticeable absence of any sense of unity in the department's work. The several sections of the Report, Housing, Local Government,

* Report of the Ministry of Housing and Local Government for the year 1955 (C.M.O.9876): H.M.S.O., 6/-.

Water and Sewerage, Planning, Mineral Working, New Towns, and Finance, appear to have been conceived in splendid isolation. Reading the section on Housing, there is nothing to hint that the same Ministry may be responsible for, say, Planning or Water Supplies, or that there is any necessary connection between these subjects. There is, too, a marked absence of any general statement on how the Ministry's work hangs together or what policy, if any, informs its general conduct of business. Nor is this deficiency entirely remedied by a liberal sprinkling of the Minister's personal apocalyptic utterances.

The most serious gap in the Report is the lack of any statement or analysis of what is wrong with affairs in the several fields considered. For instance, the Report gives much factual information upon the progress of Slum Clearance. Yet the Ministry does not say if they consider that the clearance programme is adequate to keep pace with obsolescence. If the programme is keeping pace or exceeding the rate of obsolescence when shall we be clear of slums? In such matters the Report is not overtly smug, but there is an underlying sense of self-satisfaction to the text. Apologists may reply that the Ministry has cause to be pleased with the considerable burden of work which it discharges; and there is much force in this contention. Nevertheless, today the Ministry face many problems of which little or no hint is given in these pages. Of course it cannot reasonably be asked that a departmental Report should contain statements of policy not yet put before Parliament, nor, perhaps, even entirely articulate. However, it can be asked that the Ministry should present the public with a full and fair appreciation of the present position as revealed by its own work. This, after all would be in the Ministry's own best interests. Problems fairly presented will interest wide sections of the public, generate new thought, and awaken many sympathies for the difficulties of the official task. These are things which surely the Ministry can hardly disdain?

But when all is said, criticisms of the Report should not obscure the fact that it is a useful and sensible document. It represents a great advance on the quality of the last Report, for which we shall all be thankful. The pamphlet will be of much value to M.P.s, officials and those professionally concerned with the Ministry's work. May we hope that the next Report will make an equal advance, be at least equipped with an index, and, perhaps, appear less belatedly?

EVENTS AND COMMENTS

PORTUGUESE ARCHITECTURE

H.E. the Portuguese Ambassador Senhor Pedro Theotonio Pereira opened an exhibition of modern Portuguese architecture at the B.C. last week. My agents tell me that the Ambassador was remarkably well informed about architecture and took a keen critical interest in the work displayed. Senhor Pereira is a famous yachtsman and in his lovely schooner Bellatrix came fifth in last summer's Torbay to Lisbon race. I overheard him describing a picture of his ship to a group of architect sailors at tea after the ceremony. The exhibition, in marked contrast to the recent "Built in the U.S.A.", consists of panels of small photographs most attractively mounted on a light timber and metal framework. It may sound patronizing to say that much of the work is surprisingly good, but the fact is that we know nothing of modern Portuguese architecture in this country. Although the photographs are very small they include many colour prints which help a great deal in illustrating the wide use of ceramic tile and mosaic both as furnishing materials and for decorative purposes.

Many of the larger buildings are rather heavy in detail and many others follow the general lines of international modern. Among the more imaginative structures are several huge stadia and a most interesting domed indoor arena. Best of all I liked some of the small shops and restaurants, particularly a greengrocer's with delicious fruit displayed in tiers of legged baskets. The exhibition includes examples of ceramic tiles, marble and hollow clay blocks. These blocks, some designed for pot floors and some for partitions, are in spite of their thin wall sections, extremely heavy and appear to be very strong.

The photographs are supported by not very informative sketch plans, and it is a great pity that the illustrated catalogue of the exhibition has not yet arrived. There was a mild panic over the arrival of the exhibition, not caused by the B.o.T. this time, but by what the Ambassador called "a good British ship" being six day's late. The packing cases only arrived at 5.30 on the evening before the opening, and Senhor Bastos Coelho, the organizing architect, assisted by B.C. staff, worked all night to have the show ready for the press at 10 am.

ARCHITECTURAL SLEUTHS

Mr. George Grenfell Baines, who is to give the two R.I.B.A. Christmas lectures this year, has chosen an entertaining theme for the first of them. It covers Exploring, Discovering, Detecting, and using the eyes and ears, and includes the stair case—an architectural detective story.

His second lecture is called School Work and Architecture. The Lectures will be given on January 3 and 4, 1957.

These lectures are an excellent institution. What a good thing it would be if they could be repeated in other parts of the country. Well delivered, sane lectures on architecture are badly needed in schools and more

The portrait of Mr. C. H. Aslin, past president, R.I.B.A.

particularly in the less progressive public schools. R.I.B.A. please note.

PRESIDENT'S NIGHT AT THE R.I.B.A.

I enjoyed listening to Mr. Kenneth Cross giving his inaugural address and found it interesting and informative. I have remarked on Mr. Cross's excellent delivery before and it is quite clear that he intends that no one shall have cause to complain that he mumbles. My only regret was that there were not more people there to hear him. There seemed to be a general feeling that the inaugural address should be made more of an occasion. The A.A.s' dinner-jacket rule, in spite of minor grumblings, was well supported, indeed more people attended the dinner than have done so on this occasion within, I believe, living memory. I am not suggesting dinner-jackets at R.I.B.A. general meetings, but a recasting of the putting on of the Presidential Address might be considered.

The vote of thanks to Mr. Cross was nicely done by the Presidents of the R.I.C.S. and the A.A., but this was not by any means the only item on the programme. The London Bronze Medal was presented to Mr. Frederick Gibberd for his "passenger handling" building at London Airport. Mr. John D. Profumo received the replica on behalf of the Minister of Transport and Civil Aviation, who was unable to attend. Mr. Profumo in a polished speech paid Mr. Gibberd many compliments. Mr. A. J. Hill, managing director of Taylor Woodrow, the general contractors, also spoke.

Certificates of Distinction in Town Planning were presented to Dr. Leslie Martin, Mr. Peter Shepheard, Mr. Nelson Blackett and Mr. Hugh Wilson, the president reading a short citation for each.

Finally, Mr. Cross unveiled a portrait of Past-President Aslin, by Mr. Allan Gwynne-Jones, D.S.O. The Punch-and-Judy-like *mise-en-scene* of this event with its over-bright top lighting, provides an unkind start for any portrait. I did not have a chance to inspect it in better light, and so must suspend judgment. Mr. Aslin told the audience of the rigours of sitting and something of its compensations and Mr. Gwynne-Jones in a charming and diffident little speech said how much he had enjoyed painting Mr. Aslin.

BRITISH DESIGNS MAKE U.S. NEWS

The Walker Art Center Minneapolis publishes "Design Quarterly" devoted to good design in Architecture, Furniture, Accessories and Graphic Design. The issue dated November, 1956, contains potted biographies and illustrations of the work of Misha Black, Milner Gray, Lucienne Day, Robin Day, Abram Games, W. M. de Majo, Ernest Race and Hans Schleger.

MORE CONNAUGHT ROOMS

Several new suites have been added to the already vast Connaught Rooms in Great Queen Street. One of my agents tells me that the appearance of the new rooms is "bland and unexceptionable" which, I find, takes a bit of believing when one knows the rest of the place. He says, however, that everything is so good mannered and in such good taste that all character has been eliminated. He thought that the rooms should be more sumptuous to make a more fitting background for banquets. Not sumptuous enough, eh? Even when taking into account that the new "Louis" and "Georgian" candelabras contain some 50,000 pieces of crystal?

SHARP FOR OXFORD AGAIN

It is excellent news that Dr. Thomas Sharp is to be appointed consultant on minor relief roads for Oxford. This appointment was strongly recommended in the A. & B.N. in September. Dr. Sharp is the obvious choice for the job. The decision to appoint Dr. Sharp was made after a move to appoint a civil engineer instead had been defeated by 30 votes to 22 in the Oxford City Council. Opposing Dr. Sharp's appointment, Mr. F. M. Brewer doubted whether Dr. Sharp could give the Council any information in addition to that for which they had already paid a considerable sum. The Oxford ratepayers' Association sent a letter to the Council criticizing the appointment as unnecessary expenditure.

Mr. P. S. Spokes, Chairman of the planning committee said that they wanted someone sympathetic to the Minister's request, and he thought no one was better suited than Dr. Sharp. (Hear, Hear [Abner].)

MODULAR SOCIETY BEANO

The Modular Society held its annual general meeting at the B.C. last week, some fifty members attended. This was pretty good for an annual general meeting. Mr. Peter Gardiner, of Bristol, made an impassioned appeal for the adoption of the 4in module so that those who lived by purveying things modular, and he said he was one such, could get on with the job. The real fun of the evening was a "one night stand" by some 25 member firms exhibiting examples of their modular wares.

I picked up a lot of interesting information, the most important piece being that the Sussex & Dorking Brick Co. is finding that it can produce coloured glazed clay bricks at very considerably under the originally quoted price of £63 per thousand.

BRAW LADDIES WANTED

In last week's issue you will find a large advertisement offering architectural jobs at Cumbernauld new town where Hugh (Canterbury) Wilson recently started as chief architect. He tells me he is looking for chaps with the spark of life in them. They will need it for the new town at present consists of a bald and very wind swept hill. The head man of the Corporation is General Sir Gordon MacMillan.

ABNER

NEWS

Coventry Cathedral Contract Placed

Coventry Cathedral Reconstruction Committee have accepted John Laing & Son's tender amounting to £781,000 for building the nave of the new Cathedral, which is expected to take five years to complete.

The work included in the contract covers the superstructure and internal vault of the nave; the porch linking the new building to the ruins of the old cathedral and the glass screen forming the west wall of the new Cathedral. Angels and saints in alternate rows, to the design of John Hulton, will be engraved on the glass.

Two new suggestions by Basil Spence have received approval. A lighter finish, such as plaster, Mr. Spence has suggested should be used instead of pink grey stone for the interior, in order to show off the stained glass windows made at the Royal College of Art (see A. & B.N. 9.8.56), and since the walls are now to be white, the white reinforced concrete internal vault will be infilled with rich timber slats.

L.M.B.A. Appoints Education Officer

Mr. F. H. Towle, M.A., until recently headmaster of Royal Wolverhampton School, has been appointed Education and Training Officer to the L.M.B.A. He will act as Clerk to the Board of Administration, set up last year under the Chairmanship of Mr. L. J. Holloway, to organize the pupilship and studentship schemes through which Public School and Grammar School boys are trained for employment in the technical and administrative sides of the building industry.

New Techniques

Opening the L.M.B.A. Educational Conference in Ironmongers' Hall, last week, Mr. Foster said that at previous conferences they had discussed various aspects of education as it affected the building industry, concentrating last year on training for management. This year they were devoting the whole of the time at their disposal to the subject of training craftsmen. While traditional construction and the combination of the traditional with new techniques would survive, they must face the fact that with the introduction of new architectural styles, new materials and the increase in the number of factory-made components which required only assembly, some changes would become necessary in craft training. It was to that aspect of the subject that particularly invited their attention.

Among the subjects discussed were evening classes, educational standards, City and Guilds examinations, part-time day release, certificates for practical work and disciplinary action by schools and employers. The conference was attended by representatives of the Technical Colleges throughout London and of the City and Guilds of London Institute in addition to members of the L.M.B.A. Council.

R.I.B.A. Council Meeting 6:11:56

Appointments

European Productivity Agency: Conference on Building Management: Rotterdam: R.I.B.A. Representative. Howard V. Lobb.

Joint Committee on Materials and their Testing: R.I.B.A. Representative. Frank Heaven in place of Professor W. N. Thomas.

R.I.B.A. Architecture Bronze Medal: The South Eastern Society of Architects: R.I.B.A. Representative on Jury to consider Award. E. Steward Smith, President, Berks, Bucks and Oxon Architectural Association.

Code of Practice for Structural Use of Timber in Buildings. F. L. Felgate.

Code of Practice for Brickwork. D. J. Green and R. N. Wakelin.

B.S.I. Committee C.E.B./12: Water for making Concrete. Frank Heaven.

M/53: Kitchen Tables and Stools for School Catering. Mrs. G. M. Whitley in place of G. Newell (resigned).

F.S.B./-: Fire Standards Committee. Eric L. Bird.

B/91: Cork. S. Vincent Goodman.

R.I.B.A. Dinner, 1957

It was decided to hold a dinner at Guildhall in the Spring of 1957. Owing to the reduction in facilities at the R.I.B.A. building caused by the building programme, there will be no possibility of holding a reception during 1957.

Tour by President and Secretary to Overseas Allied Societies

Approval was given to the draft programme for a tour by the President and Secretary during April and May, 1957. Arrangements are being made for them to visit the Institute of Architects of Malaya, the Royal Australian Institute of Architects and State Chapters, the New Zealand Institute of Architects, the Royal Architectural Institute of Canada and the American Institute of Architects.

R.I.B.A. Architecture Bronze Medals

The Council gave formal approval to the awards made by the following juries: Birmingham and Five Counties Architectural Associations—Research Laboratory for Messrs. Guest, Keen and Nettlefold Ltd., Lanesfield, Wolverhampton, designed by Messrs. Lavender, Twentyman & Percy (A. R. Twentyman and C. G. Percy).

The Norfolk and Norwich Association of Architects —The Norfolk County Council Secondary Modern School, Loddon; designed by A. F. Scott & Sons (E. W. B. Scott, T. E. Scott, M.C., P. J. Arnold, R. A. Brewster and A. L. Cobb).

The Institute of Northern Rhodesian Architects

Approval was given to the application of the Institute of Northern Rhodesian Architects for admission as an Allied Society under the provisions of By-law 69. The province of the Institute will be Northern Rhodesia with Nyasaland and the Institute will become an Allied Society from January 1, 1957.

Competition for Trade and Other Technical Publications

Approval was given to a proposal by the Science Committee that the Building Centre should be approached with a view to collaborating in the organization of a competition for trade and other technical publications. The objects of the competition are to recognize excellence in building product literature directed to the architect; to aid manufacturers in increasing usefulness of such literature and to encourage manufacturers to adopt standard sizes as laid down by B.S.1311. The competition would be in three classes: (i) Literature consisting mainly of technical information produced by associations of manufacturers or independent bodies and designed to give information on design, methods of application, standards of workmanship, etc., of a class or group of products. (ii) Literature offering technical information on the product of a single manufacturer. (iii) Literature primarily of an advertising nature designed to bring a producer's name and product to the notice of the architect.

The award would consist of certificates of exceptional merit, certificates of merit and honourable mentions.

Architects' Sign Boards

Approval was given to arrangements by which architects' sign boards of the approved design could be made locally.

There will in future be three alternative methods of supply: (a) The complete board to be supplied from the Lettering Centre. (b) The supply through the R.I.B.A. of a printed full-size drawing of the board and an alphabet in the approved style of lettering so that members may produce their own boards locally. (c) The supply of the boards completed but without the name and address of the architect and a drawing of the alphabet from which members can arrange for the board to be completed. Full details will be published as soon as possible.

Festival of Women

Approval was given to a proposal from the Public Relations Committee that the R.I.B.A. should assist with arrangements for the design and construction of an exhibit consisting of a prefabricated house to bring out the theme that in the housing industry increased productivity could come only from prefabrication. This will be presented at the Festival of Women to be held at Wembley in May, 1957, and the R.I.B.A. would also assist by preparing a booklet explaining the work of an architect and his role as the designer and co-ordinator of prefabricated materials and components.

Entrance foyer with 40ft long bar, part of the new extensions to the Connaught Rooms. Architects: H. V. Ashley and Winton Newman

Completion of R.I.B.A. Building

General approval was given to the plans for the completion of the top storey of the R.I.B.A. building. The addition of two further storeys over Nos. 66 and 68 Portland Place will be carried out as a continuation of the building operation on No. 68. These storeys will make provision for further committee rooms, additional urgently needed office accommodation, some exhibition space and a new canteen dining room and kitchen.

Direct Election to the Fellowship

Approval was given to a recommendation of the Royal Australian Institute of Architects that Mr. Oswald Victor Chisholm, F.R.A.I.A., Past-President of the Western Australian Chapter, should be elected to the Fellowship under the provisions of the Supplemental Charter of 1925, Section IV, Clause 4. Mr. Chisholm was elected accordingly.

Architectural Exhibitions

The Council accepted an offer from the French Embassy to provide an exhibition of contemporary French architecture to be shown at the R.I.B.A. in February and March, 1957. The offer of the Finnish Embassy to provide an exhibition of Finnish architecture to be shown in April, 1957, was also accepted.

Eastern F.B.T.E. Training Programme

Following the great success of the 1956 Training Programme the Eastern Federation of Building Trades Employers has announced its proposals for courses to be held next year.

The week-end residential courses for builders' foremen will be repeated, this time at Wansfell College, Theydon Bois, Essex, in February, St. Edmund's House, Cambridge, in March; and Wymondham College, Norfolk, in May. In addition, later in the year there is to be a Stage II Course at Belstead House, Ipswich, for those who have already attended a Stage I course, Work Study, Mechanization and New Methods being the main subjects.

An innovation next year will be two week-end courses for the smaller builder. These are being held at Pendley Manor, Tring, Herts, in February, and the Westcliff Hotel, Clacton-on-Sea, in November.

The week's residential course for senior executives which was such an outstanding success at Madingley Hall, Cambridge, this year is being repeated with the co-operation of the Cambridge University Board of Extra Mural Studies.

Another feature of the Federation's Training Programme next year will be a week-end course for senior apprentices. This is to be held at Belstead House, Ipswich, in January.

Law and Administration

Frost Precautions and By-laws

Last winter there was extensive damage to houses as a result of frozen pipes. A survey made by the Ministry of Housing and Local Government revealed that of almost a million houses some 18 per cent had suffered from damage by frost in the early months of this year. As a result the Minister has issued a *Circular* 56/57 in which he gives advice on a number of important ways in which a repetition of frost damage on such a large scale may be avoided. The most important of these recommendations relates to by-laws. A great many statutory water undertakers have by-laws which were made under Section 17 of the Water Act, 1945. The Minister now urges these authorities to amend their by-laws to bring them into line with the British Standard Code of Practice with regard to frost precautions in buildings. The Circular provides a draft which if adopted will do this by substituting new by-laws for some of those already in use. The principal effect of the changes advocated by the Minister will be that if a householder observes the recommendations of British Standard Code of Practice C.P. 99 (1956) the main requirements of the by-laws shall be deemed to be satisfied.

The Circular also contains numerous other recommendations and suggestions. Architects and builders may wish to note the advice of the Minister that:

"It appears . . . . that, at least in some areas, the administration of water by-laws could with advantage be tightened up. Water undertakers would, he thinks, be assisted if local arrangements could be made with the building by-law authorities for them to be kept informed of the approval under building by-law of plans which involve installing, replacing, or renewing water or sanitary fittings. The Minister would suggest that water undertakers should get into touch with building by-law authorities with a view to making such arrangements."

Moreover, water undertakers have power under Section 35 of the Water Act, 1945, to supply water fittings to any person, to whom they supply or propose to supply water, on request, water fittings and to install, replace or alter such fittings and they may make appropriate charges. The Act defines the term "water fittings" by saying that it "includes pipes (other than mains) taps, cocks, valves, ferrules, meters, cisterns, baths, water closets, soil pans, and other similar apparatus used in connection with the supply and use of water." The Ministry observe that some water undertakers to use these powers and "other undertakers may wish to consider making use of these powers with a view to helping the public to take precautions against the risk of frost damage."

Trade Effluents

Another aspect of the water problem has been under review by the *Central Advisory Water Committee*, they have recently decided to establish a sub-committee to consider the operation of the existing law in relation to trade effluents and various related matters. The job of the Committee may have a rather dull and uninspiring sound but its deliberations are capable of being of first importance and may closely affect building work in many ways. This problem of water supplies is closely connected with much of the Ministry's work on mineral resources, a field in which the Ministry have scored their most outstanding success. It is much to be hoped that the Ministry's work on water will be as successful as that on minerals, for the problem of water supplies is one of increasing importance to us all.

Accidents on Building Sites

The Ministry of Labour and National Service have published volume 29 of their series of booklets called *"Accidents: How they happen and how to prevent them."* This issue deals with some typical common causes of accidents in building and construction work. These include accidents caused on Scaffold-Mounted Lifting appliances, by Roof Crawling Boards, and Collapse of Staying, and those concerned with ladders, cranes and lifts. So much of litigation about building is at present concerned with accidents to workmen on site that this booklet should be of value to builders and contractors.

In Parliament

Housing Interlude

The only subject which diverted the House of Commons from its preoccupation with the Middle East crisis during the first days of the new session was housing. Mr. Mitchison, the Opposition spokesman on this topic, introduced it into the debates on the Address in reply to the Queen's Speech on November 7.

He found some significance in a breakdown of the housing figures for the current year, a total of about 270,000. Since 1954 (when the total was 300,000) the private builders' share, he said, had increased from 88,000 to 116,000 a year, while the local authorities figures had fallen from 290,000 to about 135,000 a year. Private building, he contended, could make only a limited contribution to the needs of the ordinary people, who still looked to the council housing list as their best, and even their only, chance of getting a house.

He was critical, too of the omission from the Queen's Speech of any reference to new towns, and of any indication that the New Towns Act was to be amended. That Act ought not to be used to allow property companies to do the job of a development corporation and take a rake-off. It was possible under its provisions to hand over the new towns to people other than local authorities, and his information was that that was what the Minister intended if he got the chance. The Opposition view was that housing was not merely a matter of building a house and haggling about the price or rent. It ought to be a public service, and in some form or other taken over by the community.

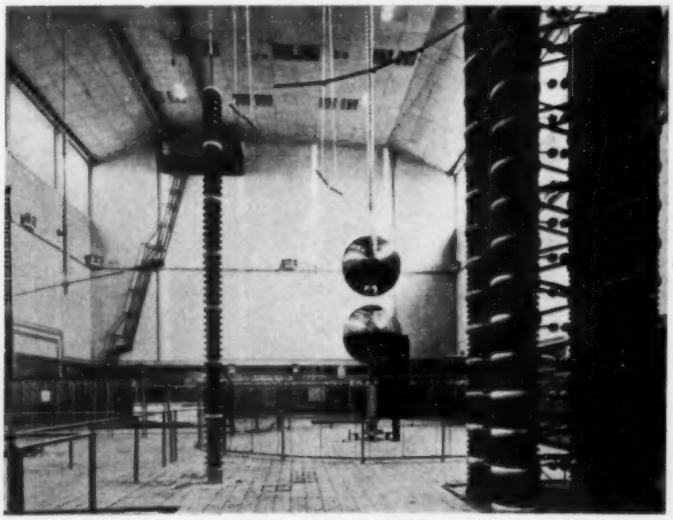
Mr. Enoch Powell, Parliamentary Secretary to the Ministry of Housing and Local Government, denied the accusation that the Minister was trying to persuade reluctant local authorities to build new towns, when it was the Government's job to do so. There was no need for such persuasion. Manchester wanted to do it, Birmingham was seeking discussions with the Minister on the subject; and the London County Council was also contemplating building a new town, although they had so far made no approach to the Minister. In allowing private development in new town centres the corporation was, like prudent estate managers, spreading the risks, doing some of the development themselves and allowing private enterprise to do the rest.

The national stock of houses was continuing to increase at a high rate. Returns for the third quarter of the year showed that the level of completions had been very little below that of last year. The indications were that 270,000 houses would be completed this year. There was no serious falling away in construction by private builders or local authorities. When private enterprise building was at a rate of 120,000 or 130,000 a year it was fantastic to say that it could make only a small contribution to the relief of ordinary people; it was evident that the demand was coming from many ordinary people.

It was clear from the returns already in that local authorities envisaged submitting no fewer tenders this year than were approved last year. The rate at which progress in slum clearance was moving showed that before long large numbers of houses would be demolished and the occupants rehoused. It was consistent with the achievement of a slum clearance programme of 375,000 houses for the first five years—the target set in 1955.

The Secretary of State for Scotland added the information that it was estimated that the number of houses completed in Scotland this year would be about 33,000.

Interior of the high voltage insulator laboratory of Pilkington Brothers, at Ravenhead, opened recently by Lord Citrine, Chairman of the Central Electricity Authority. Architects: Handisyde and Taylor. General contractors: Bovis Ltd.



Coming Events

The Institution of Structural Engineers

Midland Counties Branch. November 20 at 6.15 p.m. "The Design and Construction of a 90ft span Prestressed Precast Concrete Roof System", by Dr. D. D. Matthews. At the Becket Sale Room, Becket Street, Derby.

Lancashire and Cheshire Branch. November 22 at 6.30 p.m. "The Design and Construction of a 90ft span Prestressed Precast Concrete Roof System". At The College of Technology, Manchester.

Midland Counties Branch. November 23 at 6 p.m. "The Design, Manufacture and Full Scale Test on Formed Structural Sections", by E. Griffin and Dr. J. M. Harvey. At the James Watt Memorial Institute, Birmingham.

The Royal Institution of Chartered Surveyors

November 20 at 7 p.m. Annual Dinner at Grosvenor House, Park Lane, W.1. The principal guest and speaker will be the Minister of Works, the Rt. Hon. Patrick Buchan-Hepburn, M.P.

The Institution of Civil Engineers

November 22-23 at 5.30 p.m. Calder Hall symposium. At Great George Street, S.W.1.

The Building Centre

November 21 at 12.45 p.m. Lunchtime film show. "Lead for Building", by the Lead Sheet and Pipe Council. At 26 Store Street, W.1.

The Faculty of Architects and Surveyors

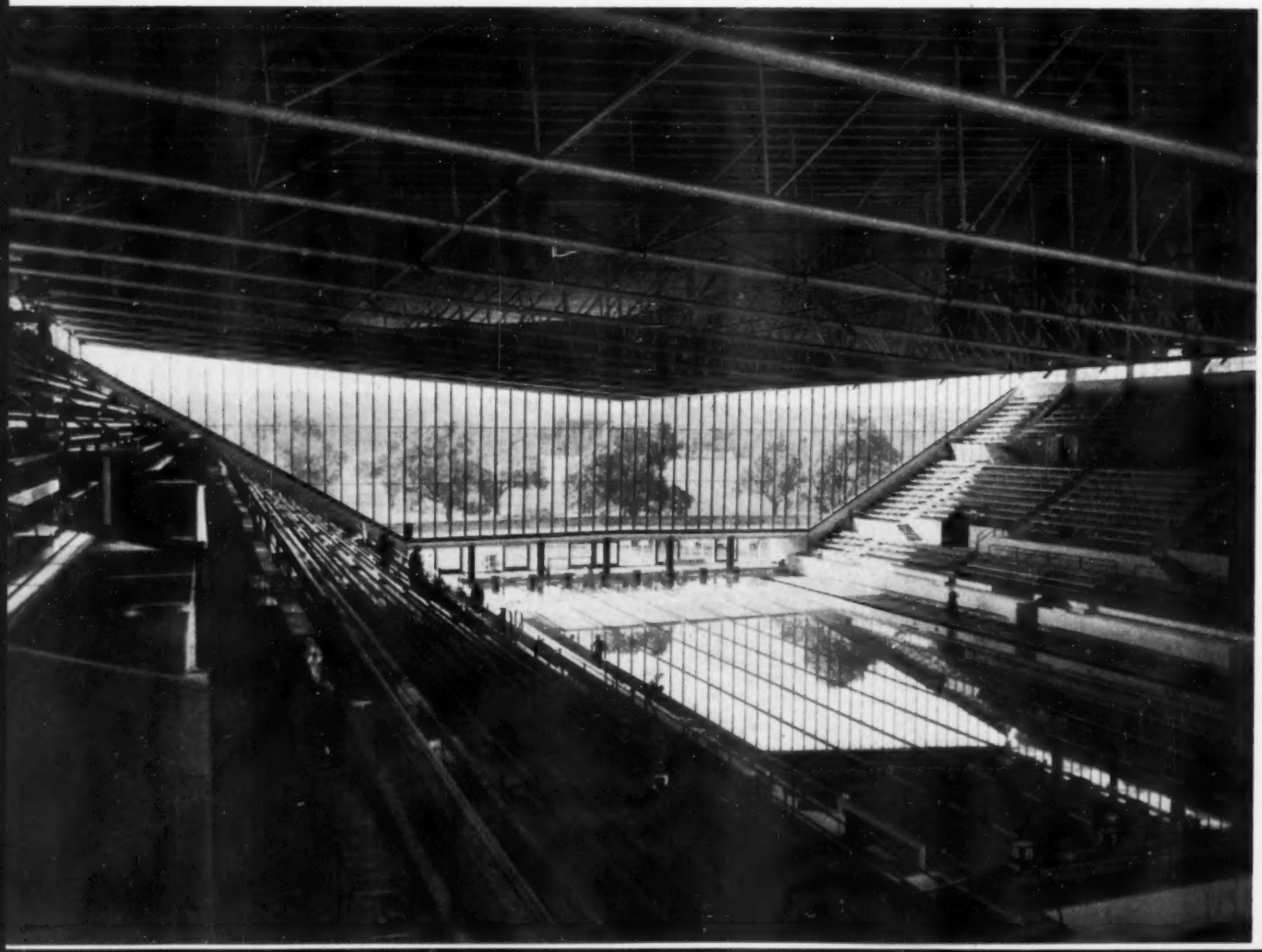
November 21. General Meeting: Films and Talks given by I.C.I. Plastics Division. At 68 Gloucester Place, W.1.

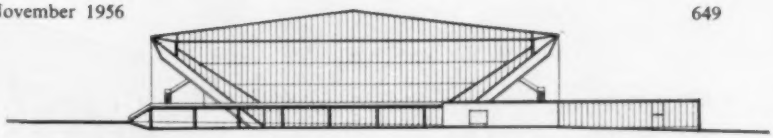
Cement and Concrete Association

November 23 at 7.30 p.m. "An Introduction to Prestressed Concrete", by R. C. Blyth, M.A.(Cantab.), M.I.C.E., M.I.Struc.E., F.I.San.E., at the Lecture Theatre, Grosvenor Museum, Grosvenor Street, Chester.

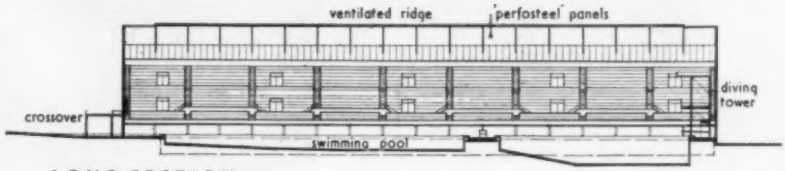
OLYMPIC GAMES SWIMMING STADIUM

THE 1956 Olympic Games will open on 22 November at Melbourne, Australia. The main venue will be the Melbourne cricket ground, and for the event one of the old grand stands has been demolished and replaced by a new three-tiered stand to hold 40,000 : altogether there will be room for over 100,000 spectators. Near the cricket ground and alongside the Yarra River has been built the Olympic Park Sports Centre. This contains three arenas, one for hockey and football, another for athletics and football, and a third with a hockey field encircled by a cycling track. Also at the Olympic Park is the Swimming Stadium which has been specially designed and built for the occasion. New grandstands have been built for each of the arenas and together they have a total capacity for about 74,000 people. Much the most interesting of all the new buildings, however, is the Swimming and Diving Stadium, illustrated in this article. In the words of the chairman of the committee of Assessors, "this is one of the few cases since 1900 that Australian architecture has got into world class, and the pool will embody much of interest to other countries. It is not only the most economical scheme submitted but also by far the most brilliant and original".

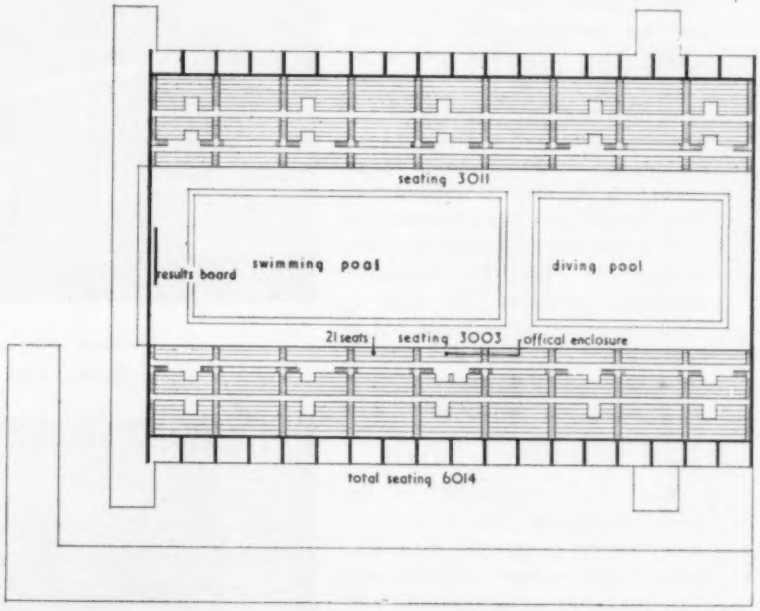




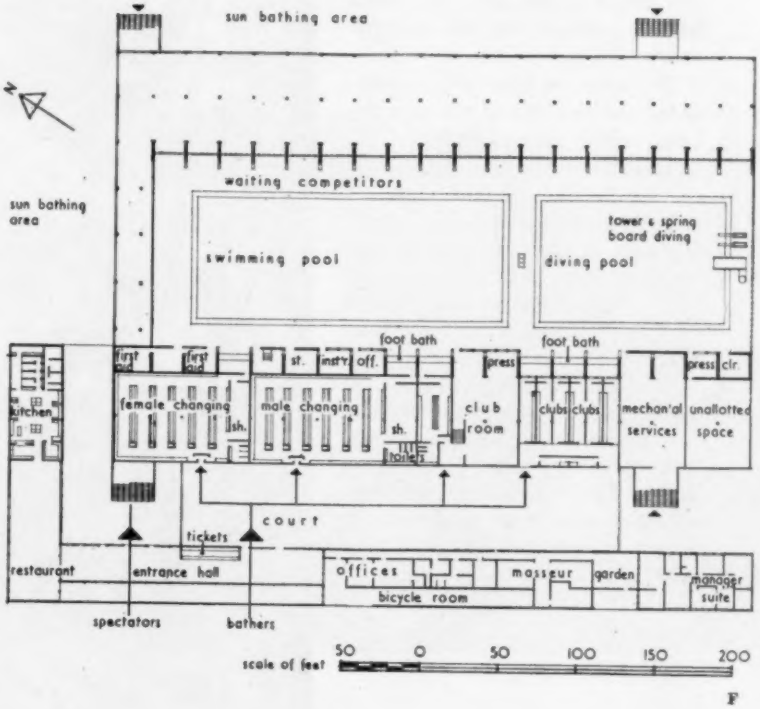
END ELEVATION



LONG SECTION



ABOVE, SEATING PLAN. BELOW, GROUND FLOOR PLAN



AMONG the many new buildings which have been erected in Melbourne for the Olympic Games is an outstanding example of modern architectural design. This is the Swimming and Diving Stadium at Olympic Park, beside the River Yarra—the work of a group of young Melbourne architects who won the national competition for the design of the project in which 72 entries were submitted. The four young architects and the engineer, who all graduated together from the University of Melbourne in 1949, are: John Murphy and his wife Phyllis (in practice together); Peter McIntyre and Kevin Borland (in practice together); and William Irwin, who collaborated with the structural engineering.

The unorthodox structure consists of only two main components—the stepped sides at an angle of about 30 degrees carrying the seating, and the roof tying them together. The outward thrust of the sloping sides is thus borne by the tubular steel roof trusses. The tensile forces applied largely to the top chord of the trusses reduced the compression caused by normal vertical loads and made it possible to reduce the depth of the trusses considerably. The building is anchored at each side by steel cables, each set countering wind or load stress from the opposite side. The structure recently passed special wind-tunnel tests, in which the stadium was subjected to pressure of up to 80 miles an hour for fifteen minutes, although the highest winds in Melbourne (75 m.p.h.) usually last only a few seconds.

The seating capacity of the stadium is for 6,000 people and seating construction is of concrete carried on the sloping girders. The roofing is asbestos and the entire end walls of the building are glazed

Olympic Games Swimming Pool

to provide the maximum of natural light.

The colour scheme employed is decidedly imaginative, being orange for the roof, red for the walls above the glazed portions and grey and white on the sides.

The building contains two pools—one for swimming and one for diving. The swimming pool is 50 metres long and 20 metres wide to conform with Olympic specifications, and the diving pool is 31 metres by 20 metres. It has a diving tower with 3, 5, 7½ and 10-metre levels. The Olympic pool has a false end to be removed after the games to leave a pool 55yd long for Australian swimming distances. The water is drawn from the River Yarra and is continuously circulated and purified by filtration and chlorination. The temperature of both water and atmosphere is maintained at 70 deg F.

The actual construction of the pools themselves has a note of unorthodoxy, in that the verge and above-water sections are tiled, and the underwater surfaces coated with "Epikote" resin based paint. This combination of finishing techniques was chosen as the most satisfactory balance between cost and performance.

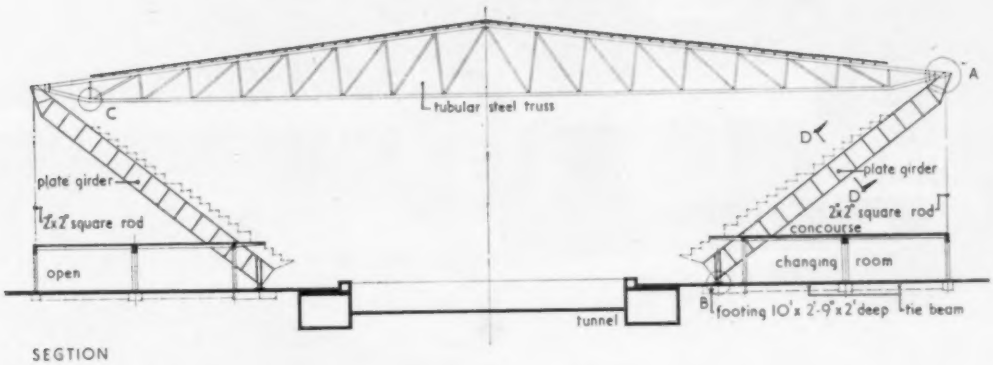
The pools are lined with concrete slabs, and caulking of the gaps has been carried out as follows:

The slabs on the base of the pools are 8in in thickness and these are linked with rubber dumb-bells leaving a gap of approximately 4in deep by 1in wide. Sealing was carried out by using Canite strips 5in in width and ½in thick, rammed in so that they are compressed to approximately ¼in. Approximately 2in of a pliable bituminous material—Tacilite—was then poured hot into the gap, leaving a final gap of about 1in deep. The final sealing was done with a cement render (3 parts sand, 1 part cement) and trowelled to a smooth finish.

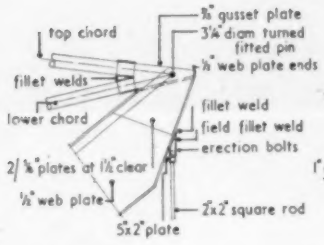
Above, view showing vertical cables to take wind loads. Below, aerial view

THE ARCHITECT and Building News,
15 November 1956

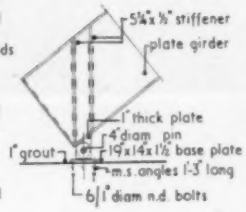
Right, frame under construction. Below, section (scale : 1in = 48ft) and structural details. Bottom, glazed end elevation after completion



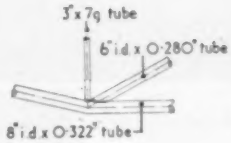
SEGTION



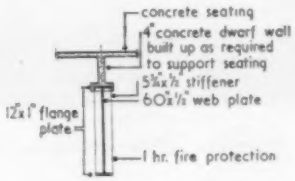
DETAIL AA



DETAIL BB



DETAIL CC


concrete seating
4" concrete dwarf wall built up as required to support seating
5¾"x ⅜ stiffener
60"x ½" web plate
12"x 1" flange plate
1 hr. fire protection

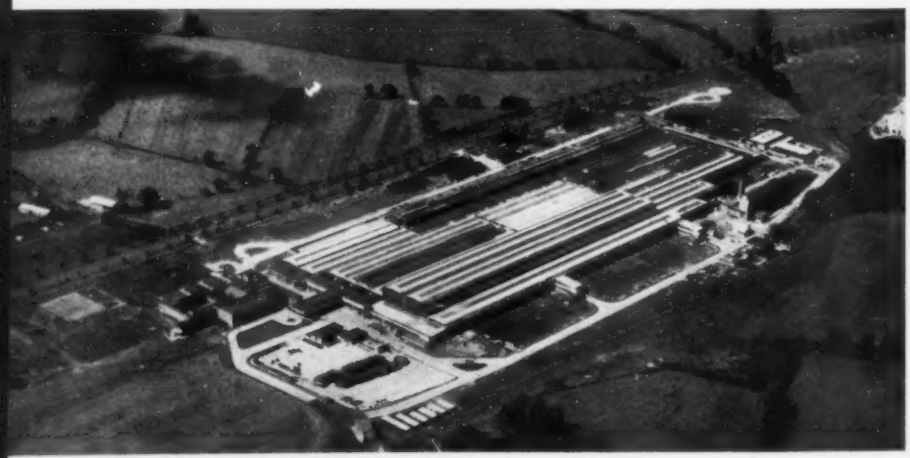
SECTION DD

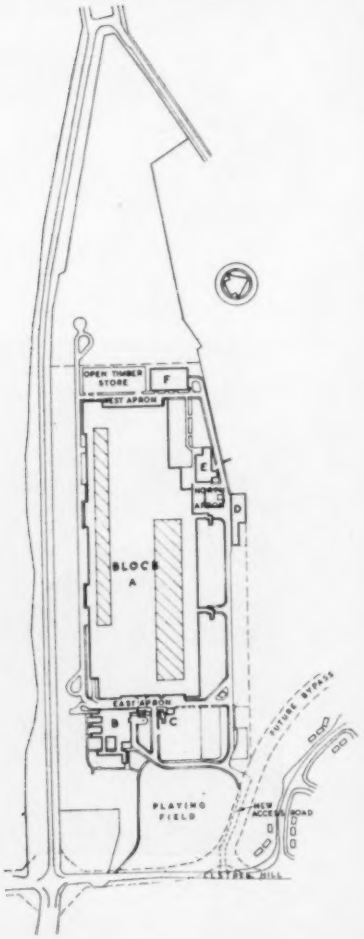
Above, main office entrance and east end of factory. Below, aerial view from east

L.T.E. BUS OVERHAUL AND REPAIR WORKS

Aldenham, Herts

architect: Thomas Bilbow
London Transport Executive's Architect





LONDON Transport's Aldenham Works lies on the north side of the Watford By-Pass at the junction with Elstree Hill. The main factory has 17 acres of usable space under cover and around it are ancillary buildings, including a canteen for 1,400 at each sitting. On the north side of the main block there is room for future expansion.

Apart from a line of workshops and offices on the south side, the main factory building is laid out as a single storey, the raised gallery arising from the construction of the railway building which has been incorporated. This was a 7-acre structure designed as a depot for the Northern Line extension intended to run from Edgware to Elstree. During the war it was an aircraft works, and later was adapted as a road vehicle workshop. The original buildings are almost entirely retained in the new scheme.

The production line is laid out as a 1,000yd long "U" with vehicles entering at the north-east corner for stripping and repairing and then proceeding along the other leg of the "U" through the paint shop and finishing line. The heart of the "U" is devoted to manufacturing shops and stores, which thus feed material to the appropriate sections of the production line.

Two groups of offices are incorporated in the main factory. One, on the south side, is an adaptation of an earlier concrete roofed workshop, and the other is at first-floor level at the east end.

Throughout most of the main factory a clear height of 20ft is provided, which is adequate for dealing with road vehicles having an overall height of 15ft. Towards the north-east corner, however, is a "high-bay" which provides a clear headroom of 50ft. Its purpose is to enable a bus body to be lifted by overhead travelling crane and carried over a row of other bodies, and provides the most economical use of floor space in this area by permitting bodies to be moved through various stages of repair in the least time and with the least inconvenience and likelihood of damage.

Mass Production Method of Overhaul

The overhaul of London Transport's buses and coaches is now divided between Chiswick, formerly the main works, which is now devoted to the reconditioning of engineering and electrical units; and Aldenham, which handles the overhaul of chassis and bodies, and uses the output of Chiswick works to produce a complete vehicle.

Work is planned on lines corresponding to those of mass production. When a vehicle is called forward from the park, it is placed over one of the four dismounting pits and its body removed from the chassis. The body is placed on an inverter, which turns it on its side to make the underfloor portions accessible. The underside is cleaned with a high-pressure jet of hot water, inspected, and light underbody repairs are carried out. The body is then lifted by overhead crane clear of all working areas and taken to the repair shop. Here it is placed on steel "stilts", consisting of fixed posts, the tops of which correspond to the main body locating points on the chassis. These permit it to be held at convenient height on what amounts to a jig conforming to the type of chassis concerned. Permanent gantries provided at upper-deck level avoid the use of ladders.

After repair, the body is lifted on to another inverter,

Boiler house from the west

sub-contractors

Aluminium Skirting : Northern Aluminium Co. Ltd. *Architectural Metalwork* : Luco Art Metal Co. Ltd. *Asphalt Tanking and Roofing* : General Asphalte Co. Ltd. *Asbestos Side and Roof Sheeting (Supplier)* : Universal Asbestos Manufacturing Co. Ltd. *Asbestos Side and Roof Sheeting (Fixer)* : Brock Roofing Ltd. *Automatic Controls* : Ronald Trist Ltd. *Blinds (Venetian)* : Tidmarsh & Sons. *Boilers* : Danks of Netherton Ltd. *Boiler House Chimney (Erection)* : Poulton & Sons Ltd. *Boiler Instrumentation* : George Kent Ltd. *Cat Ladders, Grid Flooring, Etc.* : S. W. Farmer & Sons Ltd. ; Light Steelwork (1952) Ltd. *Calorifiers and Steam Generators* : Hartley & Sugden Ltd. *Canteen Equipment* : Benham & Sons. *Coal Handling Equipment* : James Hodgkinson (Salford) Ltd. *"Deflecto" Grilles* : Richard Crittall & Co. Ltd. *Dinava Plastic Finish* : Regent Surfaces Co. Ltd. *Doors (Domestic)* : John Sadd & Sons Ltd. ; Bakers of Wycombe Ltd. *Doors (Sliding)* : Rippers Ltd. *Doors (Steel)* : John Booth & Sons (Bolton) Ltd. ; Haywards Ltd. *Doors (Alum. Faced Ply)* : Flexo Plywood Industries. *External Drains* : Francis Jackson Contractors Ltd. *Electrical Installation* : T. Clarke & Co. *Electric Controls* : Electric Apparatus Co. ; Allen West & Co. Ltd. *Expansion Joints to Roads, etc.* : Line & Sign Co. ; Expandite Ltd. *Facing Bricks (Tuscan)* : London Brick Co. Ltd. *Facing Bricks (Brown)* : W. T. Lamb & Sons Ltd. *Fencing* : Fencing (Shepperton) Ltd. *Fans* : G.E.C. Ltd. ; Keith Blackman & Co. Ltd. ; Matthews & Yates Ltd. *Fibreglass Insulating Blanket* : Brock Roofing Ltd. *Fibrous Plaster* : James Walker (Architectural Decorations) Ltd. *Floors (Lino Tile)* : Inlaid Rubolin Flooring Ltd. *Floors (Quarry Tile)* : Carter & Co. (London) Ltd. *Floors (Grano Pavings, Etc.)* : Metarock Ltd. *Floors (Wood Strip)* : Acme Flooring & Paving Co. (1904) Ltd. *Glass Dome Lights* : T. & W. Ide Ltd. *Grilles, Guides and Angle Kerb* : General Iron Foundry Co. Ltd. *Heating and Hot Water Services Installation* : Hopes Heating & Engineering Ltd. ; G. N. Haden & Sons ; Norris Warming Co. Ltd. *Hose Drying Tower* : Tubewrights Ltd. *Hollow Roofing and Flooring* : Concrete Ltd. ; Fabricate Products Ltd. *Induced Draught Plant and Grit Arrestors* : Davidson & Co. Ltd. *Ironmongery* : Comyn Ching & Co. (London) Ltd. ; Nettlefold & Moser Ltd. *Insulation* : Fibreglass Ltd. ; Versil Ltd. *Lettering* : Fredk. B. Hall & Co. Ltd. *Light Fittings* : Falk Stadelmann & Co. Ltd. ; General Electric Co. Ltd. ; Merchant Adventurers of London Ltd. ; Troughton & Young (Lighting) Ltd. ; Strong Electric Corporation (Great Britain) Ltd. ; Veritys ; H. W. Field ; British Thomson-Houston Co. Ltd. ; New Era Ltd. *Lift (Goods Passenger)* : Wm. Wadsworth & Sons Ltd. *Manholes (Covers and Frames)* : Broads Manufacturing Co. ; Dover Engineering Works Ltd. *Patent Glazing* : British Challenge Glazing Co. *Penstocks and Pipe Specials* : William E. Farrar Ltd. *Piling* : Franki Compressed Pile Co. Ltd. ; Cementation Co. Ltd. ; Piling Construction Co. *Piping* : Stewarts & Lloyds Ltd. *Playing Fields* : Gilliam & Co. Ltd. *Pressure Vessels* : Danks of Netherton Ltd. *Pumps (Circulating)* : Rhodes, Brydon & Youatt Ltd. *Pumps (Feed)* : G. & J. Weir & Co. Ltd. *Radiant Panels, Convectors, Unit Heaters* : Copperad Ltd. *Radiators* : Steel Radiators Ltd. *Removal of Camouflage Paints* : The London Stone Cleaning & Restoration Co. *Road Reinforcement* : Twisteel Reinforcement Ltd. *Road Lighting* : Metropolitan-Vickers Electrical Co. Ltd. *Ruberoid Felt Roofing* : Brock Roofing Ltd. *Sanitary Fittings* : Standard Range & Foundry Co. Ltd. ; John Bolding & Sons Ltd. *Sewage Ejector Equipment* : Hughes & Lancaster Ltd. *Sliding Door Gear* : P. C. Henderson Ltd. ; Geo. W. King Ltd. *Soot Blowers* : Clyde Blowers Ltd. *Sprinkler Installation, Fire Hydrants and Mains* : Mather & Platt

L.T.E. Bus Overhaul Works

cont nued from page 653

sprayed on the underside with carbolastic paint and lifted on to a chassis—not necessarily the one on which it arrived at the works.

By dismounting the body from the chassis work on both can be carried out simultaneously. The greatly improved accessibility is a further aid to time-saving. While the body is undergoing overhaul, therefore, the chassis is moving through the chassis overhaul shop, which lies parallel to the body shop. Here, the chassis is first cleaned and then passed along a stripping conveyor where units and parts requiring removal are taken off. It would not be efficient to attempt to repair the chassis frames on a moving line, in view of the varying amount of work required in each; the frame is, therefore, shunted to one of a series of sidings for the purpose, movement being by means of overhaul monorail conveyor.

On completion of repairs, the chassis is reassembled on a moving platform, similar to that used by motor manufacturers, and moved to a booth for spraying with protective paint. It next passes to a mounting pit to marry up with an overhauled body. The complete vehicle is then given a track test; this is carried out before painting so that if any rectification is necessary it can be done without damage to finished paintwork.

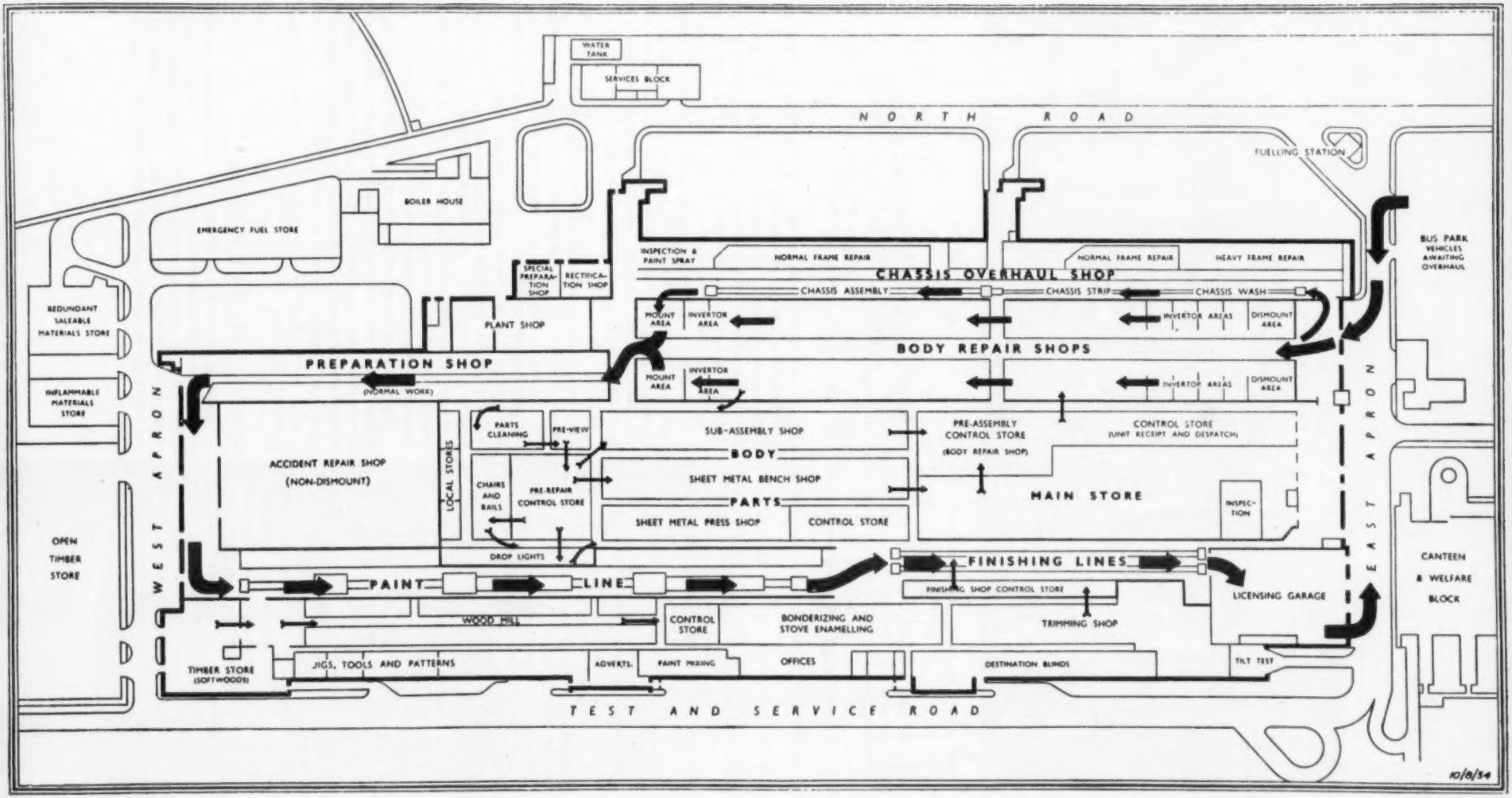
Following this test the vehicle passes through the paint shops. Exterior painting is carried out, by spraying, on a conveyor. The conveyor is not continuously moving, but moves up one body pitch approximately every hour, the cycle time allowed for the series of operations at any one working position.

On completion of painting, the vehicle is transferred to one of the two finishing lines. These also have the start-stop method of operation, not continuous movement, and move up approximately every hour. On these lines, paint

cont nued from page 653

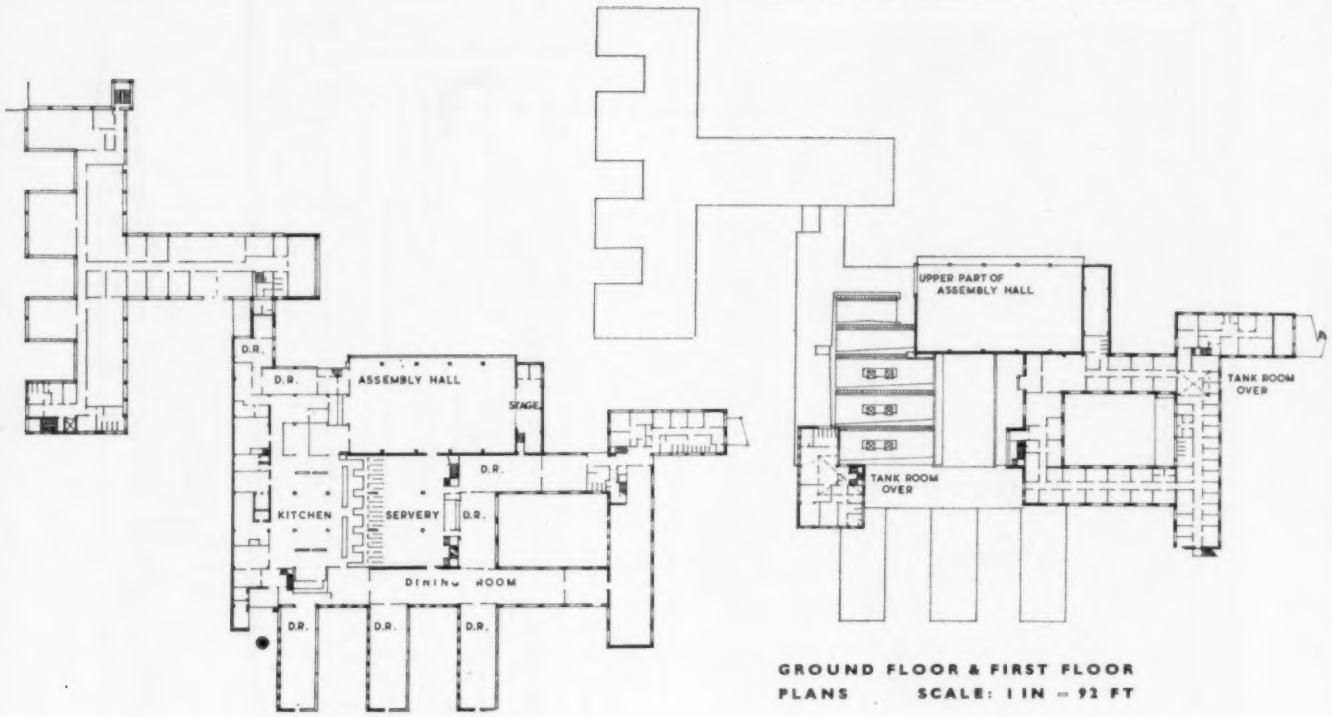
Storage Tanks : Northampton Foundry Co. Ltd. ; South Durham Steel & Iron Co. Ltd. *Steel Fire Protection* : Turners Asbestos Cement Co. Ltd. *Storage Wall to Coalyard and Cycle Park* : Stecon (Industrial Floor) Ltd. *Terrazzo Stairs and W.C. Partitions* : Art Pavements & Decorations Ltd. *Valves (High-pressure Hot Water)* : Hopkinsons Ltd. ; Shaw Son & Greenhough Ltd. *Valves (Low-pressure Hot Water)* : Hattersley (Ormskirk) Ltd. *Valves (Automatic Control)* : Spirax-Sparco Ltd. ; Satchwell Ltd. ; Thermo Controls Ltd. *Ventilation* : J. Jeffreys & Co. Ltd. *Wall Tiling* : Carter & Co. (London) Ltd. *Windows (Metal)* : W. James & Co. Ltd.

Below, view from south-east with office entrance in foreground. *Above, interior of high bay*



PLAN SCALE : 1 IN = 184 FT

SECTION SCALE : 1 IN = 92 FT



GROUND FLOOR & FIRST FLOOR PLANS SCALE: 1 IN = 92 FT

L.T.E. Bus Overhaul Works

masks are removed and seat-cushions and other minor items installed.

Finally, the bus passes through the licensing garage. In this unit vehicles receive final inspection before being accepted from overhaul, and any legal inspection and check required by the Licensing Authorities is carried out.

The shops dealing with the reconditioning of body parts lie in the centre of the works and are so placed as to require minimum movement of material. The system is that unserviceable parts flow from the body repair shops through cleaning and preview to the pre-repair stores, and then, after passing through the reconditioning shops, go to the pre-assembly control stores for reissue. New material is drawn from the main stores only to replace unrepairable parts.

To maintain factory production during the erection of the new works around the old, the job was carried out in nine stages. Complications arose from the need to phase drainage systems as the work progressed, and to maintain heating supplies during the change-over from the former steam to a high-pressure hot water system and the subsequent demolition of the old boiler-house sited within the area of the main factory.

Main Factory

This is of steel-frame construction, with cladding of aluminium patent glazing and an asbestos cement and glass fibre "sandwich". This consists of double corrugated asbestos cement sheets. The spacing of corrugations coincided so that when the bitumen-bonded glass fibre blanket was rolled over the lower sheet the top sheet bedded down snugly. This forms in effect a double roof, so that in the event of damage to the upper sheet rain will still flow down the upper surface of the lower sheet. The calculated "U" value of this sandwich is ·18.

Side cladding is by a similar method, but the inner sheets are flat with raised stiffening panels and the outer cladding is either interlocking flat sheeting or square trough section corrugated sheeting.

The roof of the original factory consisted of patent glazing and single asbestos sheets, and to bring this up to the required insulation standard it was decided to replace it by a new double roof similar to that of the new work. This was done by stripping the existing sheets, laying panel underlining sheets on the purlins, rolling glass fibre blanket on top and then replacing the original asbestos. The lower 7ft of external walls are of brick carried on ground beams and are painted internally.

Floors to all works areas are of concrete with a granolithic finish. A considerable amount of floor pit work was necessary both for normal under-vehicle inspection and also for equipment such as conveyors, hydraulic rams, tank pits and motor chambers. Asphalt tanking was found necessary for all but the shallowest of these pits.

The steel frame is as far as possible aligned to the existing factory grid to simplify both services and production lines. Generally, clear headroom inside is about 20ft (similar to that in the original building) but the two body repair bays have a headroom of 50ft to truss level.

This height enables bus bodies to be "leap-frogged" as already described, and is also used to create a head on the water storage system, the roof trusses being strengthened locally to bear a cast-iron sectional tank of 13,000-gall nominal capacity in each bay.

Each of the bays is constructed to take three 15-ton overhead travelling cranes.

Canteen and Staff Building

This is at the east end of the site. The primary planning problem was staff circulation, in so far as the direct route from the factory crossed the site most suitable for the canteen kitchens. Advantage was therefore taken of the variation in levels so that staff enter the block at

Above, southern view of typical dining wing

Acknowledgements:

Engineering, planning and design—Chief Mechanical Engineer (Road Services), A. A. M. Durrant, C.B.E. ; architectural work—London Transport's Architect, Thomas Bilbow ; architect in charge—K. J. H. Seymour ; resident architect, A. Merrill ; structural engineers—A. V. Bond and A. McBeth ; heating and ventilation systems—New Works Engineer, H. Carter, M.C. Consultants : electrical—J. H. Coombs & Partners ; drainage—J. D. & D. M. Watson ; chartered quantity surveyors—A. L. Currie & Brown ; general contractors—Tersons Ltd ; steelwork contractors—The South Durham Iron & Steel Co. Ltd.

the lower level—passing beneath the kitchens—and go up two stairways to the main canteen level.

The structural frame is mostly concrete-encased steel, although much of the roof steelwork is encased with fibrous plaster. Walls generally are of cavity construction and the roofs are either of prestressed pre-cast concrete beams or asbestos cement hollow decking covered with bituminous felt.

Other buildings which form part of the works include a works surgery and fire station, services building, boiler house and inflammable materials and scrap store.

Heating and Ventilation

With the exception of a few items of gas-operated plant, all the heat used in the factory is generated in the boiler house. Distribution is by accelerated high-pressure hot water mains which feed either radiant panels and heating units directly, or heat exchangers which in turn produce steam or low-pressure hot water.

Space heating in the workshops is almost entirely by radiant panels.

Offices are heated by steel radiators from accelerated low-pressure systems which take their heat from calorifiers energized by the high-pressure hot water mains.

The temperature control of all occupied spaces is by a combination of manual and automatic devices, both external and internal thermostats being employed.

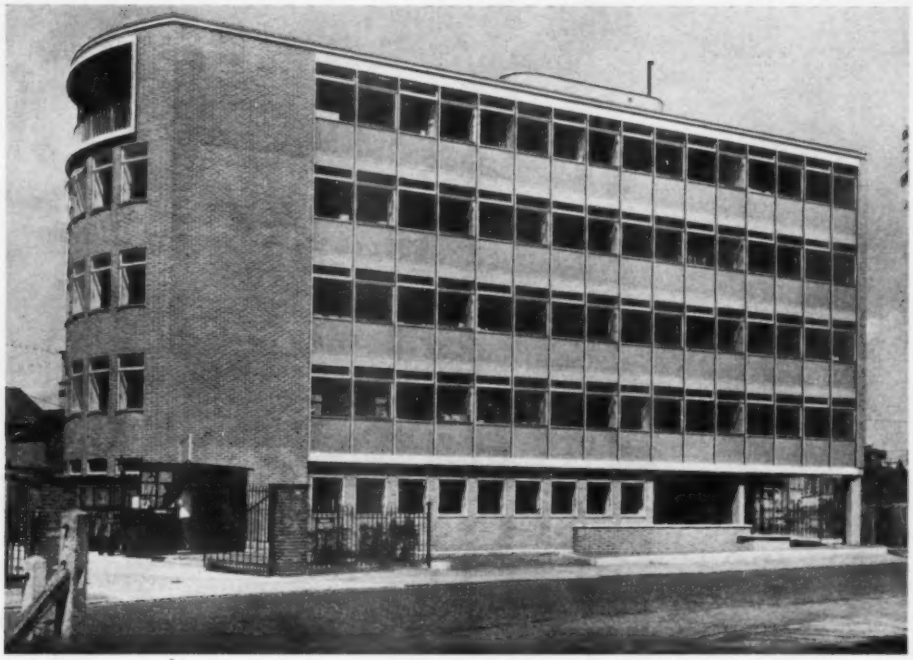
Ventilation generally in the main factory is by means of opening vents in the walls and roof which provide a natural air change. In certain areas, where heavy air extraction by process plant occurs, the make-up air is provided by means of fresh air intake fans, heater batteries and unit heaters. In engine testing areas a special extract system is used, consisting of a series of flexible tubes which connect to the bus exhaust pipes. The exhaust gases pass to underfloor ducts and are discharged above roof level by means of an axial flow fan.

Below, main wardens' post. Bottom, covered timber stack

NEW OFFICE BUILDING

Beckenham, Kent

Architects:
L. C. Holbrook
Riches & Blythin



Elevation facing Croydon Road. Main entrance on right

THIS new office building was designed to house the administration of Percy Jones (Twinlock) Ltd., printers, bookbinders and manufacturers of account books and office systems. The site is alongside their existing factory, and the building had to be set back on the site because Croydon Road is to be widened eventually.

Large uninterrupted areas of floor-space with good natural lighting were required, and from this followed the depth of the building, the storey heights and the type of fenestration. Office partitions are demountable for flexibility and generally glazed to allow supervision and to give a sense of spaciousness. The boardroom on the fourth floor has a glazed screen leading on to a balcony with a fine view of the Surrey hills.

The entrance hall contains a reception desk with telephone switchboard and an interview room with visitors' toilet.

The way-through is to enable staff and visitors' cars to be parked at the back of the building.

Construction

The structure is of pre-cast concrete resting on 40ft deep *in situ* piles. The columns have steel plates at top and bottom through which they are bolted to one another, and the main beams are connected to corbels at the heads of columns by cast *in situ* joints.

The floor slabs are made up of 4in thick hollow factory-made pre-cast units with 2in of screed laid over *in situ*. The ends of the units are tapered in section and the cavity filled with *in situ* concrete, forming composite T-beams.

An electric tower crane was used in the construction of the pre-cast frame.

The front elevation is clad in Crittall's "Fenestra" system, the spandrels being "Vitroslab" backed with 4in clinker blocks. The "Fenestra" system was modified by having extra deep mullions and a pressed metal gutter to collect rainwater flowing down the face. Over each opening light there is a cleat for fixing the window cleaner's safety belt. The other elevations have metal casement windows and grey-brown or white gault facing bricks.

Specially burnt 1¼in thick brick tiles are used to face beams.

The roof is screed with foamed slag and covered with three-layer bituminous felt roofing.

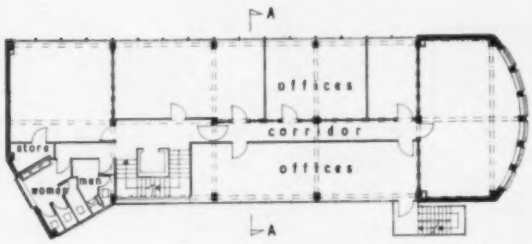
Office floors are linoleum tiles, boardroom carpeted, lavatories are cement tiles and entrance hall terrazzo tiles. The boardroom is panelled with an oak veneer finish. The first-floor showroom has panelling and display cases taken from the old offices.

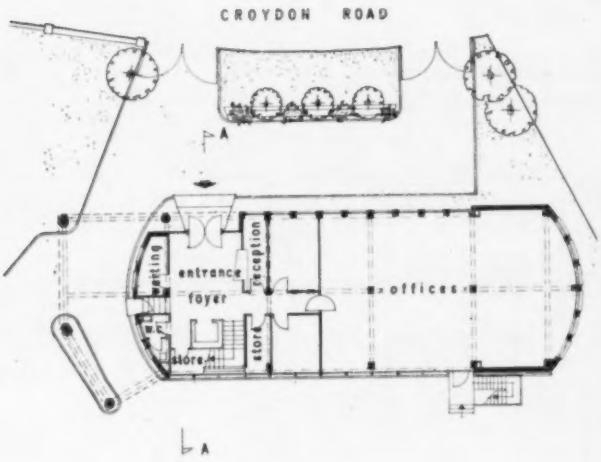
Whenever possible all pipework is contained in vertical ducts. Central heating is by low pressure hot water radiators supplied from the existing factory system.

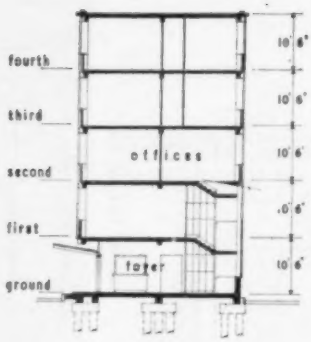
The electrical installation is unusually comprehensive, including facilities for "Dictograph" internal telephone system, Tannoy radio system, G.P.O. telephones and "Hollerith" accounting system. Cables are carried in pressed metal floor ducts set in the screed and covered with removable plates finished with matching floor material.

The "Vitroslab" panels are coloured brick-red and the mullions have white fronts and black returns. Cross panels are in light green grey. Windows are white with opening lights in black.

The escape staircase is black with pale blue supporting steelwork.





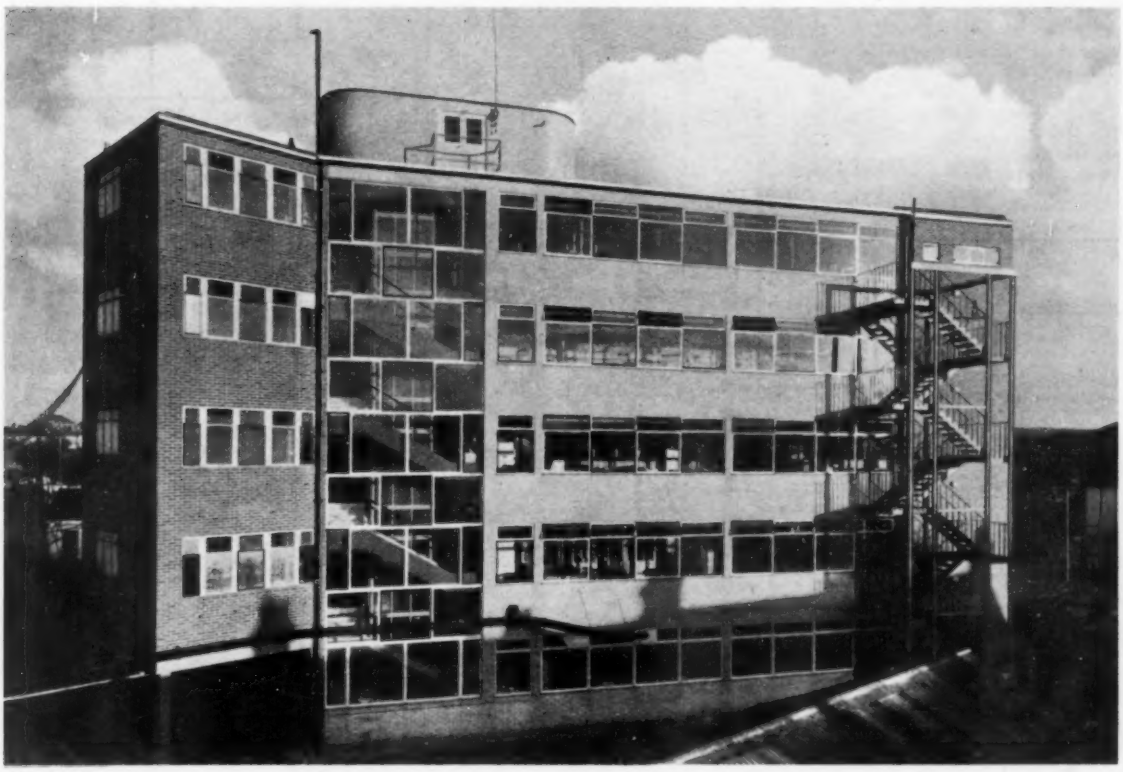


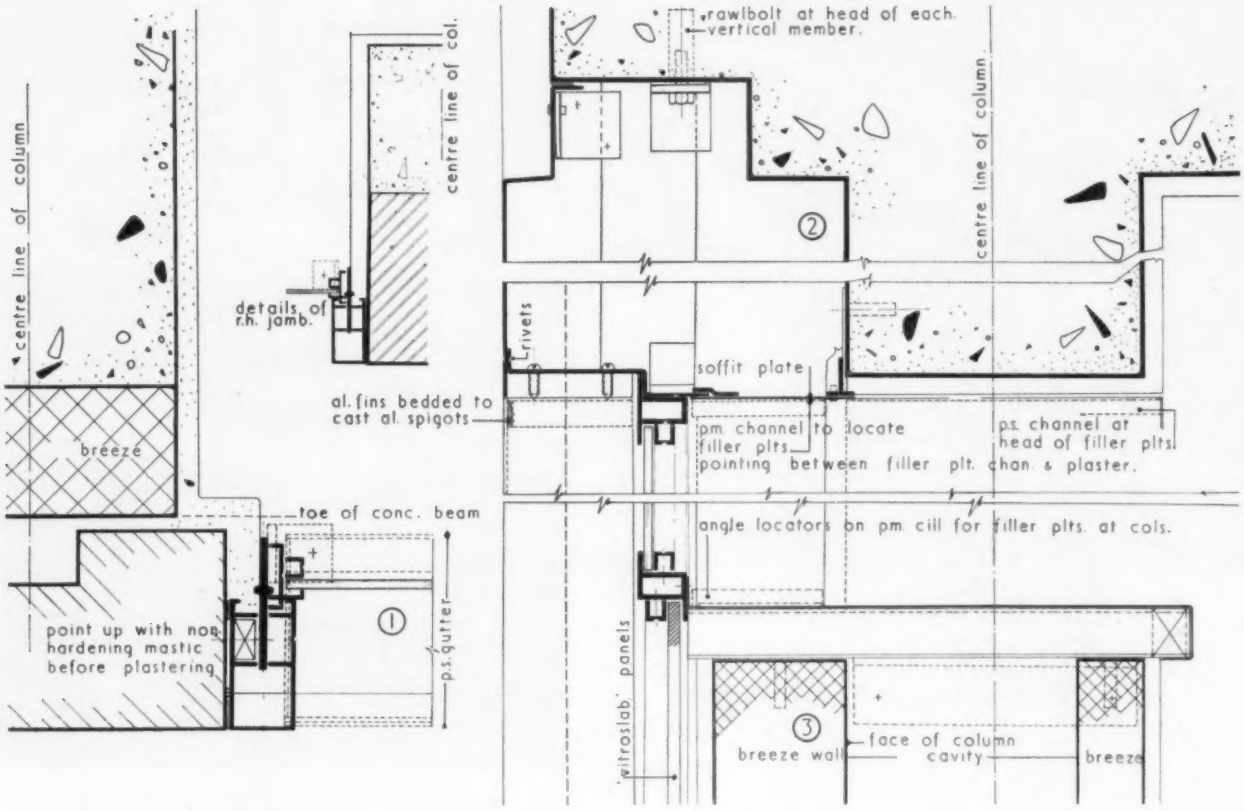
TYPICAL PLANS AND SECTION

SCALE: 1 IN = 32 FT

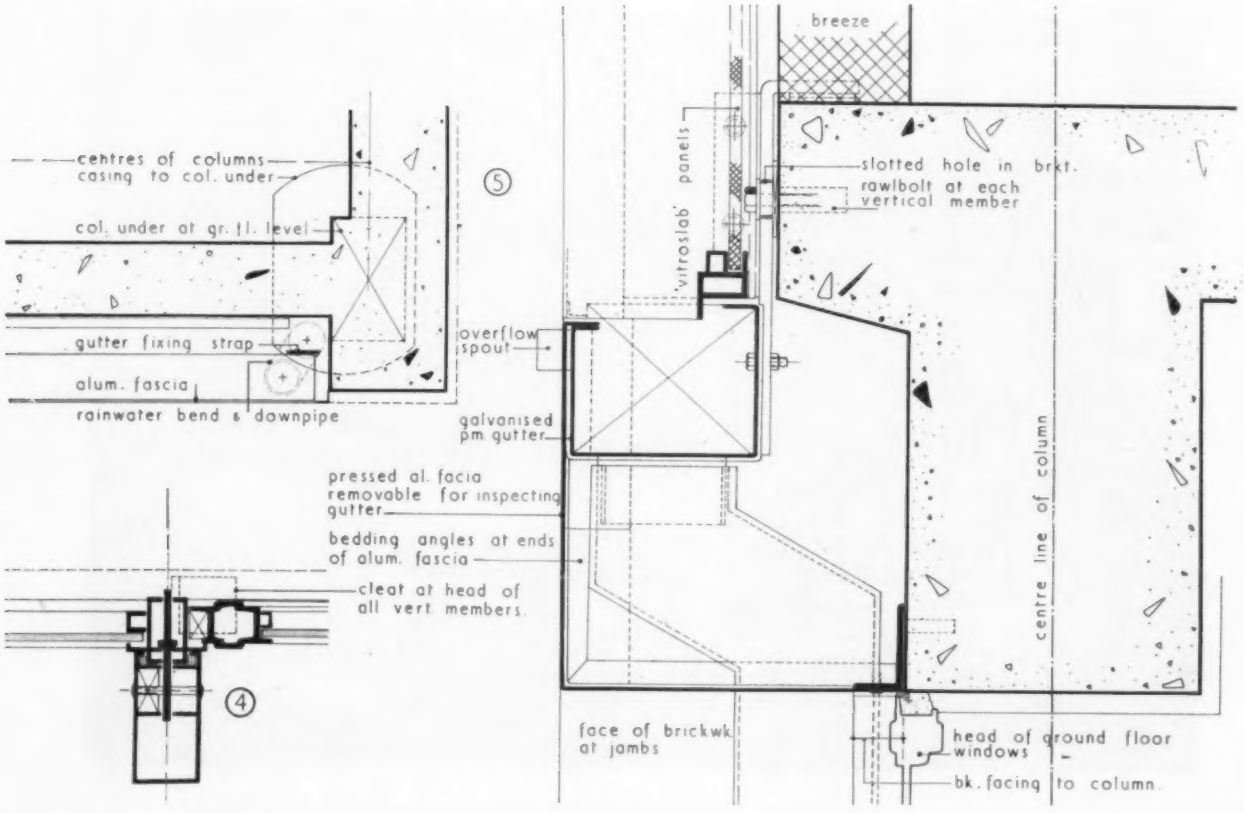
Entrance foyer with reception window on left

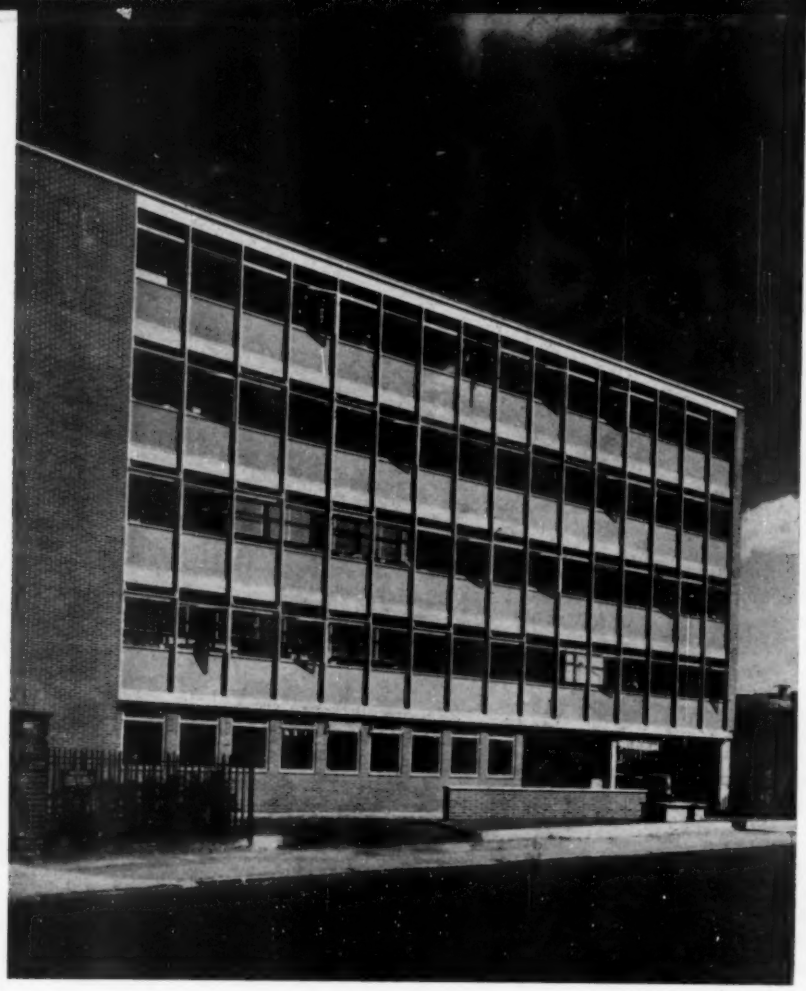
Rear of the building

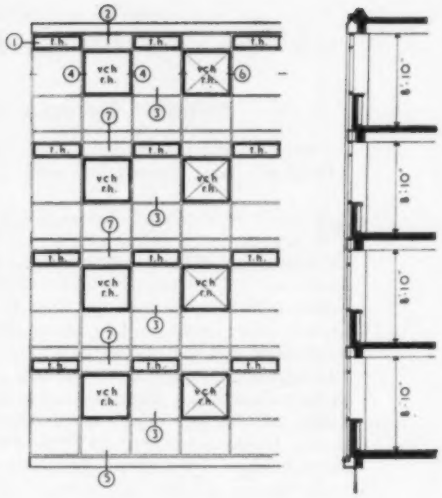



centre line of column
centre line of col.
details of r.h. jamb.
breeze
toe of conc. beam
point up with non hardening mastic before plastering
p.s. gutter
rawlbolt at head of each vertical member.
centre line of column
rivets
soffit plate
al. fins bedded to cast al. spigots
pm channel to locate filler plts.
p.s. channel at head of filler plts.
pointing between filler plt. chan. & plaster.
angle locators on pm. cill for filler plts. at cols.
'vitroslab' panels
breeze wall
face of column
cavity
breeze

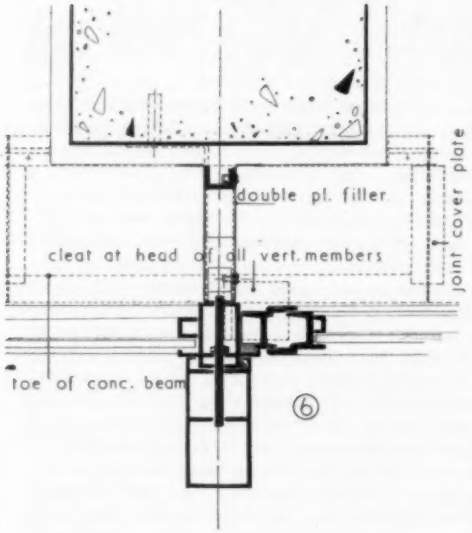
New Office Building, Beckenham

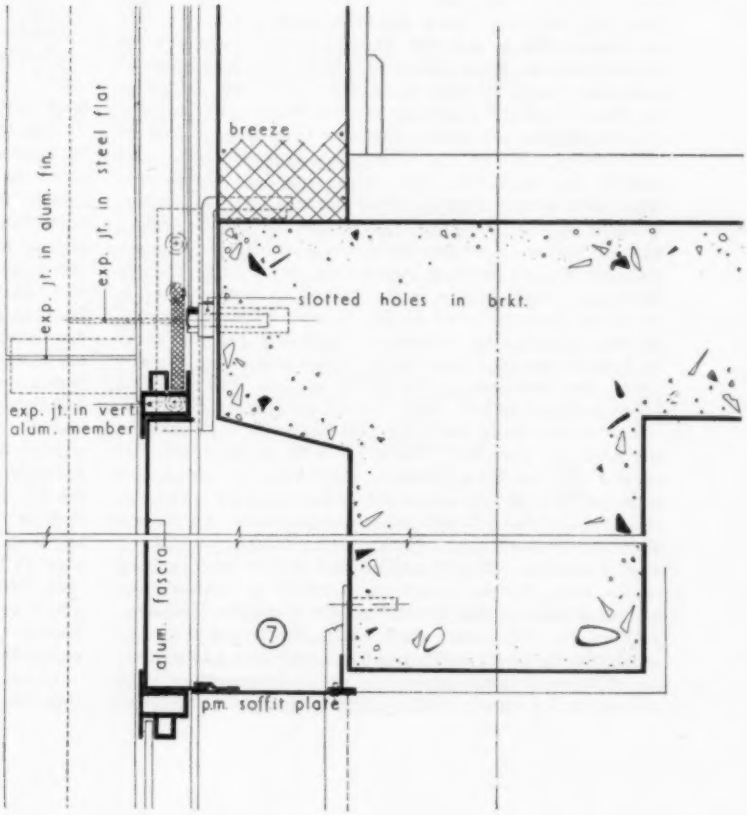

centres of columns
casing to col. under
col. under at gr. fl. level
gutter fixing strap
alum. fascia
rainwater bend & downpipe
overflow spout
galvanised pm gutter
pressed al. facia removable for inspecting gutter
bedding angles at ends of alum. fascia
cleat at head of all vert. members.
breeze
'vitroslab' panels
slotted hole in brkt.
rawlbolt at each vertical member
centre line of column
face of brickwk at jambs
head of ground floor windows
bk. facing to column.





Part of the front elevation is shown on the left and the drawing above (scale 1in=12ft) is the key to the details ($\frac{1}{8}$ F.S.) illustrated on these two pages. The curtain walling used is Crittalls "Fenestra" system. The general contractor for the works was Walker & Tooting Ltd.





LIBRARY NOTES

Britain's Baroque Island

The Building of Malta, 1530-1795, by J. Quentin Hughes. Alec Tiranti Ltd., 42s.

MALTA of the Knights was a unique society, military, theocratic, noble, and rich. Its heroic defence in 1565 conferred upon it a new lustre. Popes held it in such esteem as a Christian stronghold that they sent the most skilled military engineers of Italy to design new bastions to defy the Turks. For some 250 years the Knights imposed a growing corpus of forts, churches, and public buildings on the primitive building pattern of the island as they found it. Thus we have in this community, so unlike all others in the Commonwealth, a superb example of the Renaissance planned city, and architecture which extends from an austere Renaissance, through Baroque both Roman and Siculo-Spanish, to the beginnings of neo-classicism.

Dr. Hughes gives a useful chapter on the soft local stone, and on Malta's complete lack of structural timber. These factors have been decisive for its architecture, and for the Maltese building technique which Dr. Hughes also explains. The absence of timber, and its almost Oriental summer climate, have given to Malta, with its parched landscape and flat roofs, a persistently near-eastern character. There has thus been constant tension between the plainness of the local building tradition and the European graces of an imported Baroque itself toned down, till the luxurious eighteenth century, by its Maltese setting. The architects, as distinct from the military engineers, were mostly Maltese who accepted the fashions of Renaissance or Baroque.

Dr. Hughes fortunately has something to say, and pictures to show, on the Siculo-Norman houses and the simple, rectangular churches built before 1530. The Knights' first city, with its little *auberges* in a style developed locally, was the Borgo, on the other side of Grand Harbour from Valletta. Levantine architectural traditions from Rhodes were also apparent for some decades. Fortifications long had inevitable priority over artistic display. Valletta, the new city, was started in 1566, being planned by Francesco Laparelli who had assisted Michelangelo. The next dominant figure was Laparelli's own assistant, the Maltese Gerolamo Cassar, designer of the great Conventual church, of the Palace and of Valletta's severe Renaissance *auberges*. Roman and Sicila in Baroque traditions eventually became dominant, and Lorenzo Gafà, trained in Rome, emerges as an excellent architect in the Roman Baroque manner. In the villages, less constricted than the harbour cities by lack of ground, important buildings also arose. Finally came neoclassicism, particularly in the fine Valletta Library whose façade might almost be English Georgian.

The author deals faithfully and learnedly with most of the available material. He starts with fortifications and coastal towers; such building went on till within five years of Napoleon's unresisted attack. Next comes an account, full though not quite exhaustive, of the island's churches. After Cassar's work, there followed, particularly in the villages, Citta Vecchia, and Rabat, the building of the great domed, cruciform churches so characteristic of inland Malta. They often have a strangely "boxlike" appearance, with screen walls which, in the exact manner of St. Paul's mark their clerestories and flying buttresses. Apart from curious references to "square apses" this section is, by reason of the novelty of its subject matter to those who know little of Malta but the cities, the most valuable part of the book. Gafà's work, in Citta Vecchia Cathedral, Zeitun, and Siggiewi churches, will certainly be a revelation. After Gafà came more brilliant Baroque and Malta, like Italy, has its round, octagonal, or "ovate" churches. Dr. Hughes' last section deals learnedly, and with good line drawings, with *auberges*, palaces, houses, and public buildings; he shows that the splendid *Auberge* of Castile (of 1744) both copies and surpasses the *prefettura* at Lecce.

Some buildings have, however, been omitted, or merely mentioned in this valuable book, whose full description would have made it more complete. Dr. Hughes could, for instance, have been more explicit on the Dominican church in Valletta and on the Carmelites' gorgeous ovate one at Citta Vecchia. He says nothing on the rock-driven stores which once contained the galleys gear, and over whose wide doorways I remember seeing the ships' names. Nor does he mention Grand Master Pinto's fine row of waterside storehouses, the centre being the rich Baroque façade of a chapel which must be an architectural companion of the Porto Salvo Chapel in Hamrun.

It is, however, among the illustrations, and in the lack of a street map of Valletta, that this book's main defect lies. The photographs are inadequate for the interiors of many secular buildings like the Palace, the Union Club, and the Manoel Theatre, nor do they show the important front of the Library. Too many are of small, unimportant churches, some are badly reproduced or too small, others are awkwardly "clipped" or only show portions of buildings which could have been taken whole. One would also welcome a few general views, or vistas along streets, to capture more than this helpful book succeeds in doing of the atmosphere and exhilaration of Malta.

Fabulous Folly

The Caliph of Fonthill, by H. A. N. Brockman; with a foreword by Nikolaus Pevsner. T. Werner Laurie Ltd., 21s.

THERE was, of course, more to William Beckford than the writing of "Vathek" and the building of Fonthill. He had vast inherited wealth from West Indian estates which he never saw. At no time did he need to do a hand's turn of work. He was well connected and aspired, fantastically, to a peerage. For a decade he was an M.P. and in his last years, very appropriately, he befriended the young and visionary Disraeli. Possessed, in any case, of a personality and tastes which severed him from his social equals and "county" neighbours, he became disastrously enmeshed in a homosexual love affair in an age no more able than Oscar Wilde's to extend sympathetic understanding to such deflexions. His self-revealing "Vathek", unlike all but a fragment of Fonthill, survives and bears witness to Beckford's oriental streak which goaded him to the creation of new landscape features at Fonthill, in single nights, by thousands of labourers working by the light of flaring torches to do their Caliph's bidding. Yet Fonthill may be taken, as Mr. Brockman has done in a book which is most helpful, admirably produced, yet not quite full in its references and explanation, as the achievement of Beckford which most entitles him to remembrance. Its conception, fantastic and theatric, was his. Its actual building was that conception as much modified, in style and detail, by James Wyatt.

The author well shows that Wyatt, in the manner of his time an architect "bilingual" in classic and Gothic, was

Library Notes

æsthetically excellent. Moreover he was, at this time, the best architect available for Beckford's purposes. Though he says nothing on Wyatt's far from contemptible work at Hereford, Mr. Brockman proves his point by referring to Wyatt's achievements at other cathedrals, and at Lee Priory. Beckford, moreover, would have heard of Wyatt's talents at Powderham castle, the Devon home of his *inamorato* "Kitty" Courtenay, where Wyatt had, in the 1770s, designed a classic music room. Powderham would also have impressed him not only with its Gothicism, but by the luxuriantly rococo plasterwork of its grand staircase. Beckford had, in fact, been grounded in the principles of architecture by the essentially Roman Chambers, but he drew his inspiration for his Gothic Fonthill from far wider sources than the English architecture of the Middle Ages. The "Abbey" itself was first intended, not as an enforced solitary's residential replacement of the Palladian mansion with its "Egyptian" hall, but merely as a ruined "mock convent" like the one he would have known, in his own county of Wiltshire, at Stourhead. His travels had taken him to the genuinely mediæval, still monastic, Portuguese abbeys of Alcobaça and Batalha. His orientalism apart, he could be widely eclectic, and this book well shows how Wyatt's actual work at Fonthill, with its reasonably correct Early English and Perpendicular, was the result of a long, largely successful toning down of his patron's Oriental, Iberian, and Mediterranean fantasies.

Fonthill, as it stood when sold in 1822, was an amazing, hastily and flimsily built *tour de force*. It was never quite finished, and it was to have had a 450-foot spire deliberately built higher than the one at Salisbury not far away. I do not think Mr. Brockman justified in saying that Wyatt successfully reproduced the general atmosphere of a mediæval monastery; Fonthill, in its plan, arrangements, and still more with Beckford's non-Gothic art collection, was utterly unlike any mediæval abbey, whether English or Portuguese, which had ever existed. However, Mr. Brockman gives us an excellent critical account both of Beckford's directing ideas and of the way in which they were realised or modified, as the case might be, by Wyatt and, for the last portion of the work, by the future Sir Jeffrey Wyattville. He does not tell us that an adaptation of Fonthill, on a smaller scale, was built, in Beckford's lifetime, at Hadlow Castle in Kent, and that the tower at least of Hadlow survives to rise hauntingly over the Medway valley.

Beckford moved, for his last years, to Bath. Mr. Brockman gives a particularly good account of the alterations he made there to the three houses in Lansdown Crescent which were thrown together to form his house, and of his building of the tower on Lansdown, the long slope between them being then under Beckford's ownership, laid out as a turfed ride, and diversified with fine gardens. His architect at Bath was H. E. Goodridge, not merely a Greek Revival man who in the end broke out into Byzantine but also a skilled practitioner in a Gothic considerably more scholarly, and quite as successful, as that of Wyatt. Beckford could indeed, in those Bath years of his old age, have known his young designer to be at work on the Early English buildings of a Somerset monastery more genuine by far than his "Abbey" among the Wiltshire hills. For Goodridge was the architect employed in the 1820s, by the Benedictines of Downside on the first important, and still surviving, buildings which they erected for their own monastic purposes.

BRYAN LITTLE

Building a House

Glamorgan County Council Planning Committee—price 2s 6d.

IF you wish a booklet to be read and filed it must not only be attractive but convey its message with the minimum of effort. If, in addition, you can convey a serious subject with a sense of humour you are more likely to succeed.

Glamorgan County Council have succeeded in achieving these objects in this excellent booklet. Except for the introduction, it might well be termed a booklet without words.

The introduction by the Chairman of the Planning Committee outlines the purpose of the production. He states that in giving consideration to some thousands of applications for permission to develop, the Planning Committee have had the opportunity of examining a wide variety of designs for houses, some good; some bad; and some indifferent.

The Committee concluded that a useful purpose might be served if a small brochure in which examples of good design as well as some which are thought to include less satisfactory features were illustrated.

The suitability of a house design can rarely be judged except in relation to its proposed setting and whilst it is generally agreed that there can be few fixed rules in matters of æsthetics, and that personal taste varies within fairly wide limits, it is the aim of the brochure to show designs which conform with acknowledged conceptions of order and good taste and which need not cost more to build than period imitations or other embellished "desirable villas".

In this foreword the Chairman advises anyone about to build a house to employ a qualified architect. An architect, he emphasises, will interpret your ideas to the best advantage and will make your house not only a satisfactory place to live in but one which will contribute to and not detract from the amenities of the district in which it is built.

It does not think there will be an architect who will disagree with these sentiments but how to put them over to a lay public who have little, if any, idea or appreciation of design? This is where this booklet scores over similar publications.

The pages are 7½in high by 9in long. On one side is a photograph bled on two sides.

All the photographs have been well chosen and equally well photographed. On the opposite page is a snappy sentence appropriate to the photograph and also a humorous line sketch. In addition to the line sketch, there is occasionally a photograph illustrating a building abortion in light sepia so as not to distract from the main photograph.

It is to be hoped this booklet will have a wide circulation amongst the building public, as it could be the means of raising the standard of house design.

M. E. T.

Books Received

The Architecture of Sir Christopher Wren. By Viktor Furst, F.Ph.S., A.R.P.S. Published by Lund, Humphries & Co. Ltd. Price 63s.

Contemporary Cabinet Design. Edited by Denise Bonnett, LL.B. Published by B. T. Batsford Ltd. Price 50s.

Eric Mendlesohn. By Arnold Whittick. Published by Leonard Hill (Books) Ltd. Price 46s.

Foundations—Design and Practice. By Elwyn E. Seelye. Published by John Wiley & Sons Inc., New York, Dis. by Chapman & Hall Ltd. Price 128s.

PLANNING
by "E.&O.E."

Sites

THE ultimate planning of any building or group of buildings is influenced by site conditions and by the surroundings of the site. The physical and other factors inherent in any given site must be therefore among the first considerations to which an architect pays full attention.

Unfortunately the architect, called upon to design a building or scheme, is not often consulted in the choice of site. He is more frequently presented with a *fait accompli* and is then charged with planning his scheme in the best possible way to fit the conditions imposed by the site. Obviously if the architect can be consulted when sites are being selected, his advice may be advantageous to a promoter in the total formulation of a successful scheme.

In this section the various factors are reviewed which may influence the choice of sites or, if the site is already chosen, the various considerations which may be imposed upon the designer in the planning or layout of the buildings upon the site.

Most sites have a number of factors in common or which are found in varying combinations. Firstly, these are set out in the form of a "check list" for handy reference by the planner and, secondly, the more usual and general requirements and conditions of sites are reviewed in greater detail.

SITES: A CHECK LIST

NOTE.—Urban and rural locations will impose differing limitations and conditions; this list is intended to cover both.

FACTOR OR CONDITION	EFFECT ON PLANNING	FACTOR OR CONDITION	EFFECT ON PLANNING
Soils (superficial) e.g., gravel clay, amount of top humus, etc.	Surface drainage; type of planting and garden details; finish and base for light roads and paths.	Building Lines, usually laid down by Local Authorities.	Layout of buildings; may involve setting-back of building frontages.
Subsoils.	Foundations; retaining walls; carrying capacity of subsoils; type of excavation required.	Services (Public or Utility, available in adjoining roads or through adjoining sites.	Water, gas, electricity, hydraulic/water mains, water supply, generally subject to local or national regulations; may affect layout of buildings or site. Amounts of supplies available may affect planning. Sewers (soil or surface-water or combined) affect general layout of scheme; capacity may be material. Levels of sewers affect basement or other low-level planning, may involve drainage weirs or alternatively pumping or lifting apparatus.
Lower strata, e.g., type of rock, mining, underground railways, etc.	Foundations; retaining walls; basement structures; carrying capacity; type of excavation required.		
Levels, relation of contours to sun, etc.	Contours affect placing of buildings and entrances thereto; relationships to adjoining sites and roads; surface drainage and sewage disposal.	Public Transport, Roads.	Availability may affect suitability of site for communal purposes; main roads carrying much traffic may be disadvantageous for some developments.
Prevailing wind.	Placing of buildings; shape of buildings; planting and layout generally.	Zoning (Town and Country Planning Acts).	Affects use or limits use of both site and buildings.
Made ground, e.g., fillings of previous basements, mineral workings, etc.	Placing and shape of buildings; foundations; type of excavation required.	Amenity, etc. (Town and Country Planning Acts).	May limit heights of buildings, site coverage and/or plot ratios; facing and/or roofing materials; may affect form of buildings, e.g., flat or pitched roofs, etc.
Ditches.	Surface-water drainage and its replacement if ditches are filled in; foundations, etc.		
Wells (existing) (including R.W. Sumps, etc.).	Re-use affects layout and buildings; drainage; filling in affects foundations, etc.	Road widenings, under Town-planning schemes, and/or Ribbon Development Act, etc.	May be subject to requirements of Local Authority and/or Ministry of Transport, affects entrances to site, setting-back of buildings, etc.
Water-table.	Foundations; excavations; basement tanking, etc.	Service Roads, (ditto).	Usually required on trunk or class A roads and may be elsewhere; affects entry to site and/or number of entries and their positions.
Trees, preservation.	Well-matured trees (scheduled or otherwise) affect planning of buildings; site layout; roads, etc.	Railways and Canals.	Availability, possibility or sidings, etc., may affect choice of site; position affects layout of site and buildings.
Rights-of-lights (particularly in urban areas).	May curtail heights of buildings; distance of buildings from boundaries.	Local Authority By-Laws.	Various; may affect detail planning of buildings.
Rights-of-way.	May have to be retained, purchased or closed by Local Authority or Central Government action; closure may involve compensation or alternative routeing.	Local Government Acts (e.g., London Building Act, etc.).	Various; may affect detail planning of buildings, sites, roads, etc. Fireproofing, escape, etc.
Way-leaves (e.g., P.O. telegraphs, etc., electric power lines and the like).	May have to be retained or removal negotiated with the undertakings of the authorities concerned.	Public Control, Local Authorities (Police and Fire Officers requirements).	Various; may affect entrances and exits to and from sites; use of sites for certain purposes (i.e., Cinemas, Theatres, Garages, etc.).
Party-walls.	May have to be used or shared wth adjoining owners; alternatively new work built alongside with some loss of site-space. May be the subject of Awards (under the London Building Act) or agreements with adjoining owners in other locations. Foundations may be affected; underpinning may be required.	Public Health Acts.	May restrict use of certain sites and/or affect planning of buildings.
		Factory Acts.	Ditto.
Boundaries of site.	Entrances; relationships to public highways and to adjoining sites.	Petroleum Act and subsequent Statuary Rules and Orders.	Various; may affect particular types of layout and buildings, e.g., factories, garages, petrol stations, etc.

CIRCULATION

Circulation within the boundaries of a site must provide for the movement of (a) vehicles, (b) pedestrians and (c) the mechanical handling of goods; in addition the safety and convenience of all must be looked after at all points of intersection within the site and of exit from and ingress to the site from external public highways or private roads.

Vehicles must have a clear view of the highway and its conditions at any given time when emerging from the site through boundary walls or gates. For example, some setting back of entrances to a building or through the boundary walls of a site provides better sight-lines for drivers when entering or leaving the site. It is good principle to ensure that the outgoing driver has a full view of the highway in both directions before he has to cross the public footway. Figures 1 and 2 illustrate some of these points under urban conditions. Where heavy traffic occurs on larger sites separate "In" and "Out" ways should be provided. These should not be too far removed from each other, should be clearly signed and should, by planned location, relate to the internal site layout and circulations, ensuring that traffic lines do not unnecessarily, cross each other, or impinge on each other blindly.

Pedestrians, particularly under crowded conditions of exit or entry to sites, as, for example, in schools or factories, should be similarly guarded and assisted. Guard-rails along the curbs of the public highway for some distance on either side of the entrance or exit are sometimes provided. But this method is not entirely satisfactory and for better sight-lines and to break up pedestrian groups before the footway is reached, some such method as is shown in Figure 3 is much to be preferred.

Vehicular and pedestrian circulations within the site call for roads, and footways; the latter may not be required if traffic is slight and people can use the roadways without undue danger and inconvenience.

Roadways should not be taken up to the walls of buildings, but should

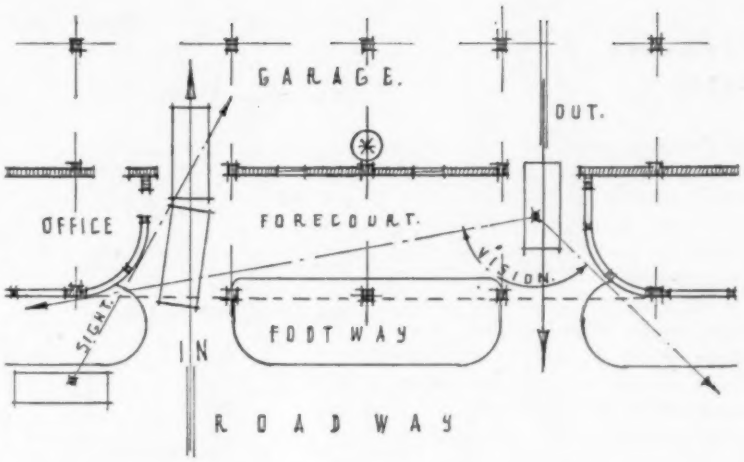


Fig. 1 Vehicular access Example, entrance to a garage

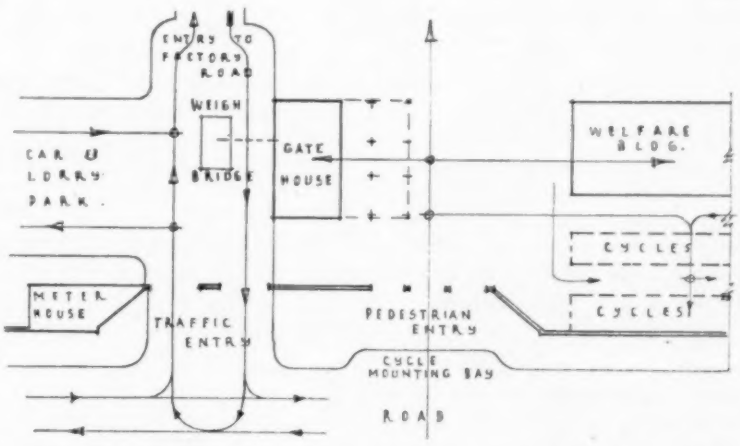


Fig. 2 Vehicular and pedestrian access Example, entrance to a factory

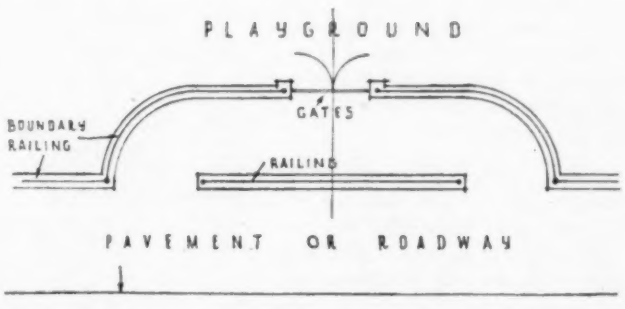


Fig. 3 Pedestrian access Example, entrance to a school

Planning 3 Sites

be provided with side paving or curbs to prevent damage to the walls. Where vehicles are liable to face or back into walls, curbs or paving should be made considerably wider than normally used along the lateral run of a road; 3ft for cars, and at least 6ft for larger vehicles. Spur-stones should be used to guard the corners of buildings or openings where sidewalks are dispensed with.

Paved footways may be taken up to the walls of buildings, but other features of the layout, such as flower beds or lawns should be kept away at least 12in to prevent mud splashing from rain or hoses and to facilitate maintenance work. Such a space should be paved in non-absorbent materials; it provides also for gullies, down-pipes, etc., to be free of planting.

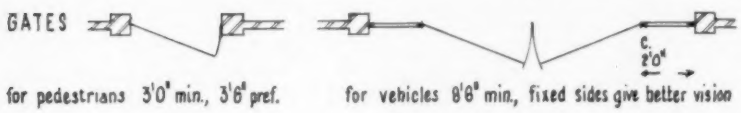
THE BOUNDARIES OF SITE

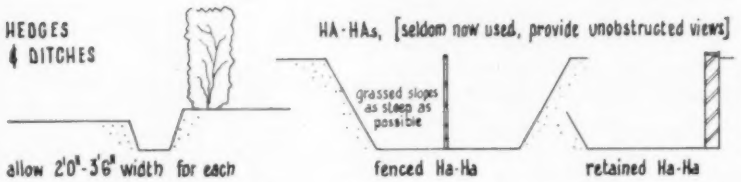
"Open" sites, where the buildings do not impinge on the boundaries, may be closed by fences, railings, hedges and/or ditches and Ha-Ha's, and access gates or ways will have to be provided for various purposes.

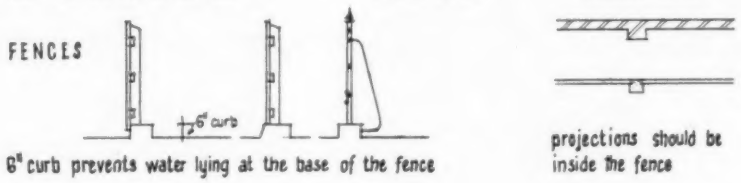
Fences and railings of different materials, other than concrete, are better erected from the basis of a solid curb as a protection from ground damp and its consequent damage. There are many types of "unclimbable" railings, the usual height of which is from 6ft to 6ft 6in.

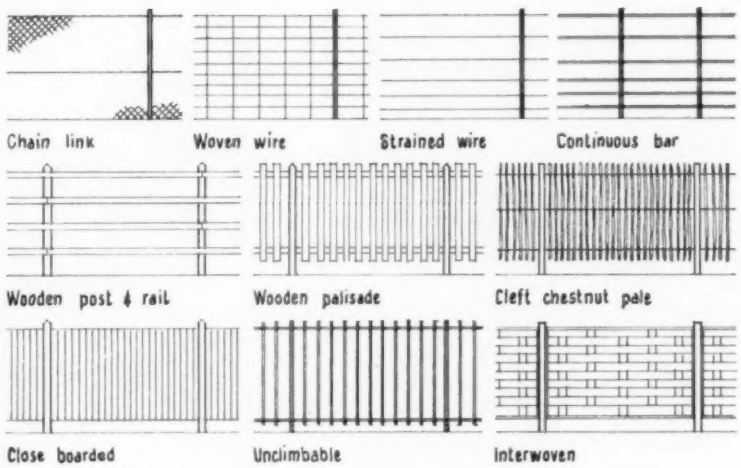
Walls are often a combination of pier and panel, whether of brick, stone or precast concrete. Posts or piers should be on the inside of the wall: to keep the external pavement or road tidy and, in addition, it can generally be assumed that projections will be less damaged from within the site than externally.

Hedges, whether alone or in combination with ditches, take up considerably more space than fences or walls and full allowance should be made. The width to be allowed for a full-grown hedge depends, to some extent on the species selected and




HEDGES & DITCHES
allow 2'0"-3'6" width for each
HA-HAs, [seldom now used, provide unobstructed views]
grassed slopes as steep as possible
fenced Ha-Ha
retained Ha-Ha





Types of fence	Maximum distance apart of uprights	Depth of posts in ground		Heights of fences	Materials for posts	Heights of fences for various uses	
Chain link ...	10' 0"	up to 4' 6" over 4' 6"	2' 0" 2' 6"	3' 0" 3' 6" 4' 0" 4' 6" 5' 0" 6' 0"	Concrete Steel Wood	Housing	3' 0" min.
Woven wire ...	12' 0"	2' 0"		2' 6" 2' 8" 3' 0" 3' 9" 4' 0"	Concrete Steel Wood	Estate boundaries	4' 0"
Strained wire ...	10' 0"	2' 0"		3' 6" 4' 0" 4' 6"	Concrete Steel Wood	Playgrounds	4' 0" min.
Cleft chestnut pale	10' 0"	up to 4' 6" over 4' 6"	2' 0" 2' 6"	3' 0" 3' 6" 4' 0" 4' 6" 5' 0" 6' 0"	Concrete Wood	Public buildings	6' 0"
Close boarded ..	9' 0"	up to 4' 6" over 4' 6"	2' 0" 2' 6"	3' 6" 4' 0" 4' 6" 5' 0" 5' 6" 6' 0"	Concrete Wood	Highways	4' 6"—5' 0"
Wooden palisade	9' 0"	up to 4' 6" over 4' 6"	2' 0" 2' 6"	3' 6" 4' 0" 4' 6" 5' 6"	Wood	Railways	4' 6"
Post and rail ...	9' 0" mortised 6' 0" nailed	2' 6"		3' 9" 4' 3"	Wood	Commercial buildings	6' 0"
Continuous bar	3' 0"	1' 6"—2' 0"		3' 6" 4' 0" 4' 6"	Steel	Pigs	2' 8"—3' 0"
						Sheep	3' 9"—6' 0"
Unclimbable ...	9' 0"	4' 0"—4' 6" 5' 0"—6' 0" 7' 0"	1' 9" 2' 0" 2' 6"	4' 0" 4' 6" 5' 0" 5' 6" 6' 0" 7' 0"	Steel	Cattle	3' 9"
						Horses	4' 0"
Interwoven	6' 4"	2' 0"		3' 0" 3' 6" 4' 0" 4' 6" 5' 0" 5' 6" 6' 0"	Concrete Wood	Rabbits	3' 6"

Planning 3
Sites

the height to which it is desired that the growth shall be maintained. Ditches will also be governed in width by local conditions and are generally widest in low-lying flat land. They are usually on the outside of boundary hedges, where they are often used to assist the drainage of footpaths or roads, the latter, in many instances, being public ways. Every effort should be made, in rural or other suitable sites to preserve old hedges and hedge-row trees so that local character may not be destroyed unduly by new development.

Gates of various materials, fixed to brick or stone piers or posts of metal, wood or concrete, should not be less than 8ft 6in clear width for vehicular traffic. Such gates can be combined in various ways as single or double gates, with side pedestrian ways and gates, or with stiles or turnstiles. Gates in many schemes, from country houses to factories or schools, are often combined with lodges, gate-offices or with weigh-bridges. Where access ways occur on estates or farms in open country, gates are sometimes omitted and roller or gridded passage ways laid down, to permit easy access for wheeled or pedestrian traffic but to stop cattle, etc., from straying.

BUILT-UP SITES

These present various problems for the planner; many of these have been noted in the check-list at the beginning of this section. Rectangular or other regularly shaped sites are comparatively easily laid out and are subject only to normal restrictions usual to such sites, party walls, angles of light, heights of buildings, etc.

The irregular site, however, with boundaries that are not straight and non-parallel with each other, asks for careful consideration and, often, the careful weighing-up of the advantages of adjustment of the external plan shapes of buildings against the loss of area which such adjustments may involve. The figure is one illustration of this type of analysis. The gain in structural uniformity and straight-

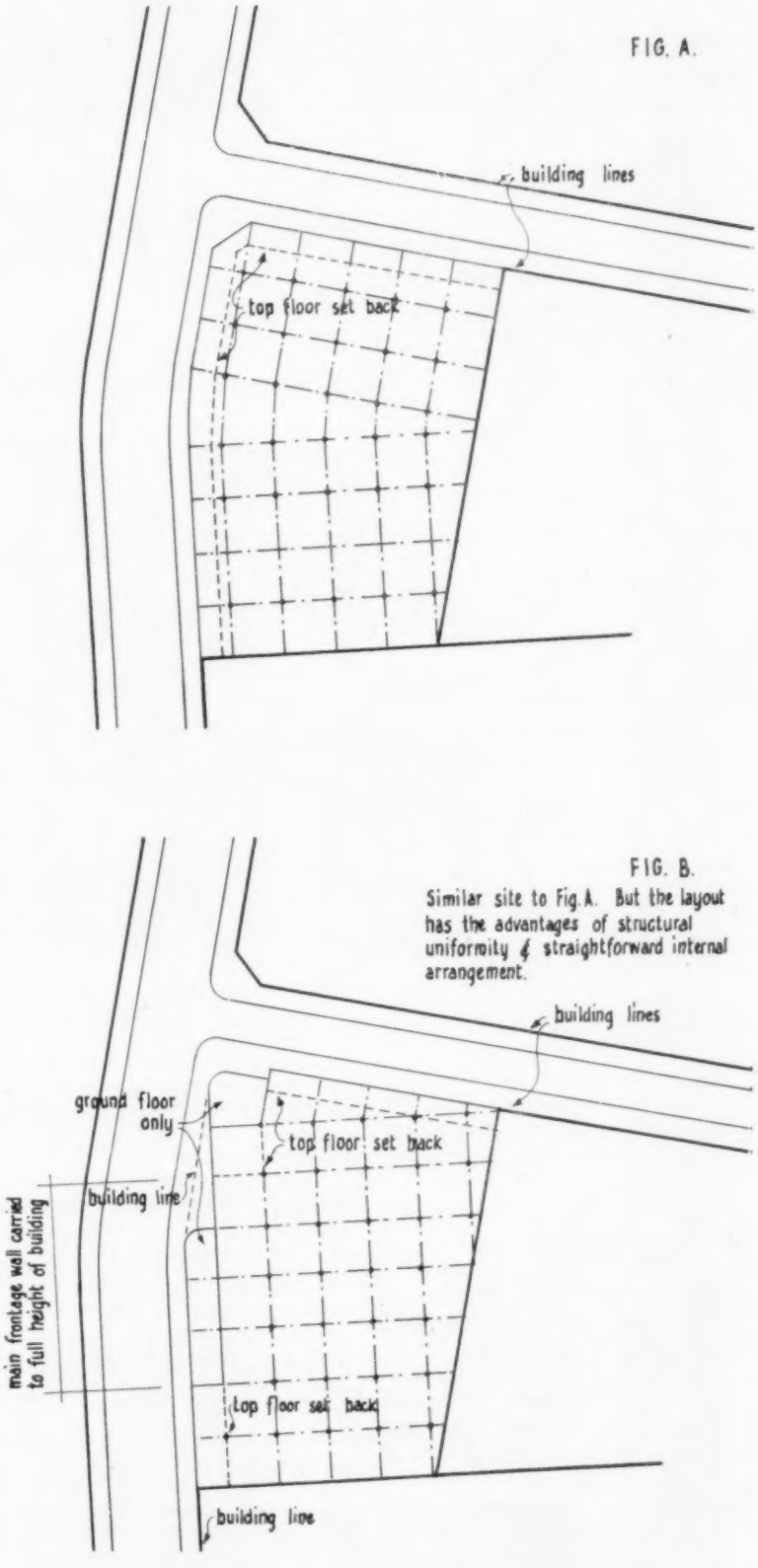


FIG. A.
building lines
top floor set back
FIG. B.
Similar site to Fig. A. But the layout has the advantages of structural uniformity & straightforward internal arrangement.
building lines
ground floor only
top floor set back
building line
main frontage wall carried to full height of building
top floor set back
building line

Built-up sites

Planning 3
Sites & Services

forward internal layout by the shaping shown in diagram B together with a possible consequent gain of height in some parts of the building, where in any circumstances, upper storeys have to be set back, is self-evident if comparison is made with diagram A, which shows that the irregular perimeter of the site has determined the plan profile of the building for its full height. In addition, the improved grouping that adjustments of this type allow, may be of great value in the general street picture from the wider angle of town planning.

EXTENSIONS TO BUILDINGS

Any forseeable extensions to buildings should be planned, at least in outline, when sites are being laid out for any sort of development.

In closely built-up areas this may prove difficult or even impossible and under certain circumstances extensions may, in consequence, have to be planned vertically with the initial structure designed for the future loading. Such a method is, from the point of view of economy, not to be recommended except where no other possibilities exist.

On open sites, however, extension schemes can be visualised and due provision made for the future by the provision of space in the right place and which is duly related to the initial scheme, with all that implies for access, services and amenity.

Services

IN the majority of projects some or all services will be available from public supplies, but in some layouts, generally the larger types, access to services may be limited to a small number of points or even to one point for each service on the perimeter of the site. In such cases it may happen that these points are not coincident and provision for the essential services must be made from connections that are on opposite sides of a site. Such conditions may affect the layout of buildings or may lead to a careful weighing-up of the cost of running services within the site against the planning of buildings from other points of view, such as aspect or contours.

Resultant compromises can only be made by equating all the factors of site planning, and obviously must depend largely on the conditions of each scheme.

WATER-SUPPLY

Water must sometimes be from wells or borings and these, owing to sub-soil conditions, may be at a distance from buildings; in any event, they must be kept away from sewage disposal. Water obtained and stored from springs is generally simpler, as, more often than not, the initial supply will be found at a higher level than that of the buildings and the sewage-disposal arrangements will be at the lowest level of the site.

Under certain conditions, such as the development of flat land, locally obtained water, or even water brought from a distance, may have to be stored in high-level tanks or cisterns to obtain the necessary pressure for the buildings. Unless the building design lends itself to high blocks, at the top of which such storage can be planned conveniently, water-towers may have to be provided. Such constructions should be considered very carefully in relation to the building layout as a whole and must, in addition, be related to the external aspect of the site and its buildings. A whole group, though well-planned in itself, may be marred, when viewed from a distance, by the misplacing of a high water-tower or power-house smoke stack. It is not impossible to conceive that these two elements may be combined to assist grouping and may, in fact, provide practical advantages as a result.

In certain types of industrial development water is often required in considerable quantity for cooling purposes. Some processes also require a large supply for washing or dilution purposes.

In these projects it becomes almost essential that the site should adjoin a major supply of water such as a river, canal or lake. While it may be a relatively simple matter to arrange for adequate water sources of this kind, the disposal of exhaust condense-water from cooling towers and the like, where it cannot all or in part be re-used, is more difficult. The raising of temperature of rivers or other natural waters becomes a factor upon which conservancy boards, harbour authorities, etc., will have to be consulted and they may impose limiting conditions on the type of discharge water, mainly concerned with temperature, filtering against sludge and bacterial growths and ask for precautions to be taken against the scouring of embankments or the silting of navigation channels.

Even greater precautions should be taken and may indeed be imposed on promoters with regard to water used for washing processes or dilution of effluents from many industrial sites. Again, sludge pits, filter beds or even chemical treatments before discharge constitute the main type of solution, but the various cases must be dealt with individually and will be affected by the factors of situation, type of water into which discharge is required and other local conditions.

ELECTRICITY

Supply is usually obtained from the public mains or the grid lines, the latter mainly in rural districts. When the latter is the source of initial supply it may be necessary to consider the provision of sub-stations. These may be required to be shared for a number of surrounding developments or, in the case of a large layout, for the sole use of the latter. Easy access for the handling of transformers, etc., may be required and, more often than not, the necessary equipment must be located near the boundaries of the site and adjacent to a public highway. The length of run for high-tension cables within a site may be a factor contributing to a final decision in the layout. In rural districts, electricity is often brought to a site by overhead lines, branching from the grid routes. This may constitute a high-cost charge against the promoter, if the distance is great; but such can be reduced if the local line can be arranged so that it may be shared by a number of consumers. Way-leaves may have to be negotiated with owners of land over which the lines are brought to the site.

With such overhead methods the question of amenity arises and various consents must be obtained from the planning authority and even

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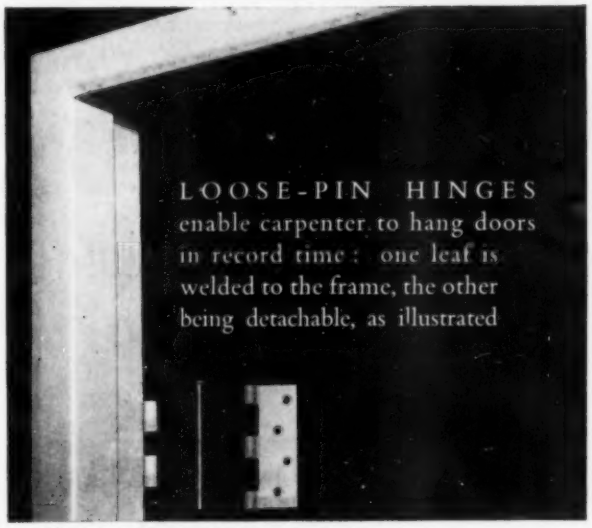
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Planning 3
Sites & Services

individual owners of land in the vicinity, as objections may be raised from an appearance point of view. Where it is possible to do so and the supply authority agrees, it may be better to bring the lines underground and the extra expenses involved may eventually be justified by gains in maintenance costs and from the point of view of amenity (appearance).

Where electricity is generated by a plant forming part of the mechanical equipment of a scheme, it can affect general planning but little, though its position on the site, as that of the heating and hot-water plants, with which it may be associated, must be carefully planned in relation to both site and the buildings and to external access thereto.

REFUSE COLLECTION AND DISPOSAL

While in smaller schemes this will be met by the usual procedure of periodic collection by the Local Authority service, there are many instances where, temporarily, local site arrangements must be made. For example, in flat schemes; chute methods and centralized containers for each block require that internal roads are provided, suitable for the circulation of the collection vehicles. Care should be taken that the widths of such roads, corner curves, backing-in and turning-out spaces are adequate for the type of vehicles likely to be used. The latter may vary considerably as between different authorities.

The disposal of industrial waste of all kinds may affect the planning of factories and similar schemes, insofar as access for road or railway vehicles is concerned and, to a lesser extent, access to the site from river and canal wharfs. All such exit ways for waste disposal must be planned at an early stage in a scheme, to avoid unsightly dumps and to avoid any interruption of delivery and dispatch routes or the internal circulations of goods and vehicular and pedestrian traffic.

FIRE-FIGHTING SERVICES

Arrangements for larger sites may be the subject of special provisions by the promoter in respect of anything from internal hydrants and dry mains to the housing of pumps and other mobile equipment. Such private organization, being highly variable, must be met by consideration of each individual case.

External fire-fighting services provided by the Local Authority, however, are governed by broad requirements which may be generalized as follows:

Easy access to all buildings from public highways for both firemen and their equipment. In the instance of large office buildings or similar block development, special provisions may be required in connection with one or more of the staircases and/or lifts. One or more of the latter may be required to be isolatable in both controls and power supply for use in emergencies.

Where sites are laid out with a number of separate blocks, as, for example, for flats, schools or hospitals, all buildings, of whatever height, should have a paved space or roadway at least ten feet wide on at least one side of each block for equipment access. If the spaces around blocks are enclosed by walls or fences, 20ft is the minimum width required adjacent to the buildings for the operation of wheeled escape-equipment. The maximum width over which such an escape can operate from the outside of walls or fences is 15ft. If blocks are in separate occupancies on each side (i.e., two lettings deep) access will be required from both sides of the block.

Care should be taken to avoid obstructions to equipment circulation and handling, such as lamp-posts, trees, etc., near to buildings or at turning points on roads or in courtyards.

Internal roads or other surfaces in a large layout should be designed to withstand vehicle weights up to 6½ ton for the combined pump-cum-escape unit and up to 17cwt for the detachable wheeled-escape unit.

Where blocks of buildings exceed 42ft in height (to the top floor), the London County Council lay down further requirements and although these apply only to that area, they form a good guide for practice elsewhere and may be summarized as follows:

The roads on one side of each block (or both sides of a "double-occupancy" block) should be reinforced to carry vehicular loading up to a total of 12ton for each vehicle (the 100ft turn-table ladder being the largest and heaviest of the equipment) and be at least 12ft in width. Such a roadway or paved strip should be sited so that the edge nearest the buildings is not less than 16ft or more than 33ft from the buildings; 20ft is the most satisfactory distance for the operation of this type of equipment.

Access gates for external fire-fighting appliances should not be less than 8ft 6in in the clear and the turning-circle space allowance should be 50 to 60ft.

TELEPHONES

In larger urban schemes these are usually dealt with by means of underground services, both external to the site and within its boundaries.

In smaller schemes, particularly in rural or suburban localities, overhead services may cause considerable thought for the planner in avoiding unsightliness. The latter may arise from pests or the running of wires against buildings or skylines.

Wherever possible this service should be planned beforehand in consultation with the authorities and the lines designed to enter the site and to circulate within it in the most inconspicuous manner.

DRAINAGE

Drainage to public sewers is normally possible. The layout of drainage within the site is mainly controlled by the levels of the sewers and whether the sewers are combined or separated into soil and surface-water.

Where, however, no public sewers are available, other means of disposal must be found, and such must conform with local by-laws and any other regulations which may apply. For example, disposal may be by means of septic tanks or, more rarely, by cesspools or by means of a full disposal-plant including filter beds and other equipment.

The levels of the site to be so treated need to be carefully considered from the outset, so that falls may be obtained—in the right direction to outfalls and such matters will, in turn, affect the position and often the whole layout of buildings on the site.

Local-disposal methods must also be relayed to the water-supply if the latter is to be from wells or borings. Outfalls from septic tanks or other types of disposal systems may come under the control of Conservancy Boards in charge of rivers or catchment areas and the necessary approvals may be required before installation.

M.H. & L.G. Annual Report

THIS Report* was presented to Parliament by the Minister on October 23. Due to the very wide ramifications of the Ministry it touches on an exceeding variety of subjects of which certain, such as housing, planning and water supply, are of very great interest to the building industry. The similar subjects as they affect Wales are dealt with in a separate section comprising some 12 pages. In addition to the text there are no less than 18 appendices, requiring 60 pages, consisting principally of tables containing very valuable summarized information.

Since the Report summarizes the events and actions of a period which ended some 10 months ago, a great deal of the information is already known and in operation as the related legislation has been enacted or otherwise put into practice by statutory instruments, circulars and the like. Nevertheless it is extremely useful to be able to see collected together the many happenings and evolutions which have led to the current position.

By far the most important information relating to building is the part of the Report concerning housing. The outstanding trend is the decision to transfer emphasis from new housing to slum clearance and the consequent changes to the subsidies offered. The subsidies for new housing have been reduced with the ultimate aim that they should be eliminated but a high rate of subsidy is to be continued for slum clearance works.

The summary of production of housing in England and Wales set out in Appendix A compares the provisions made in the years from 1950 to 1955. It is shown that new houses and flats built by Local Authorities fell from the peak of 202,835 in 1953 to 199,604 in 1954 and further to 162,525 in 1955. On the other hand the production by private builders increased steadily from 59,747 in 1953 to 87,755 in 1954 and to 109,934 in 1955. The production of houses by Housing Associations fell heavily in 1955 by about 10,000 below the previous year, also the houses built by Government Departments showed a slight decline to 6,423. The rebuilt war-destroyed houses are apparently now so few that they are no longer returned separately. Dwellings produced by conversions were 324 by Local Authorities and 2,580 by private builders in 1955, which is a slight increase on the previous year. The repaired war-damaged dwellings only provided 69 units in 1955. The total of the dwellings provided in England and Wales therefore in 1955 amounted to 286,299, a fall from 311,878 in 1954, of which new permanent houses (the figure for which appears to include flats) were over 283,000 and 309,000 respectively. It is pointed out that private building was freed from licensing control in November, 1954, which is before the period under review. It is obvious that the Minister intends to rely very considerably on the production of the private builders in the future and it seems that this trend will become more obvious when the Report on 1956 is available.

On the subject of supply of materials the Report states that the increased supplies of bricks and cement proved generally adequate during the year and that there were no reports of serious shortages or delay in supplies. As a result the economic restrictions on the use of bricks and cement were withdrawn in November, 1955. Difficulties, however, continued in the supply of steel, particularly rods for reinforcement. It is said that while steel output, including the output of reinforcement, had increased there was also a considerable increase in the amount of industrial and similar building requiring steel. Presumably also the trend towards a higher proportion of flats increased the demand for steel for housing.

During the year the increased use of non-traditional construction (referred to in the Report as "new tradition") which occurred in 1954 was reversed and only some 20 per cent instead of 25 per cent of completions by Local Authorities were in these changing types of construction. The tenders approved during 1955 apparently indicated that this falling trend was continuing. This trend is accounted for in the following words "as the total Local Authority programme declined, many Authorities were in fact finding that they could build all the houses they needed by traditional methods. These are in general preferred; in addition to which they, as a rule, cost less". It will be interesting to see whether the increasing construction of houses by private builders will in any way affect this trend, as it seems that those responsible for the provision of mortgages on private construction also have a preference for traditional methods.

Rather more than one-quarter of the dwellings completed in 1955 were flats or maisonettes. This indicates a very definite trend towards a higher proportion of these types of dwelling. The Report suggests that within the next year or so the proportion might reach 30 per cent. The reason given for this trend is that there appears to be a greater unwillingness on the part of many smaller Local Authorities to have flats as well as more flat building in the larger towns and cities outside London. A still bigger proportion of flats is to be expected as slum clearance and redevelopment of the central areas of towns and cities gathers momentum.

In regard to house sizes, the Report shows that on the average three-bedroom house there was a slight fall in area from 919 sq ft in 1954 to 914 in 1955; there has, however, been very little change in areas since the second quarter of 1953 when the last Housing Manual was issued. The average price per sq ft, however, arose noticeably in the third quarter of 1955 to 31s 4d, while the average tender price per house of £1,385 in 1954 rose to £1,417 in 1955. The increases, however, in prices were only about 2½ per cent, whereas material prices rose an average 5 per cent, while the hourly earnings rose by nearly 9 per cent between April, 1954, and April, 1955. It was thought that the relatively low rate of increase in price for the houses was due to a combination of factors, such as improvement in productivity, more use of mechanical plant, better organization and management and the restraint exercised by Local Authorities and the Department in the approval of tenders. No indications are given as to whether the production by the building trade workers showed any inclination to increase, nor is there any indication as to whether quality, finish and equipment had remained constant.

The tendency to change the proportion of dwellings of different bedroom numbers continues. One-bedroom types are steadily increasing and reached 9·8 per cent of dwellings completed in 1955 and 11·3 per cent of dwellings in tenders approved. The two-bedroom type remains constant at 35·6 per cent and it is the three-bedroom type which has fallen to compensate for the increase in the smaller accommodation houses, the numbers having fallen from 54·3 per cent in 1954 to 52·7 per cent for completions in 1955 and to 51 per cent for tenders approved in 1955. In regard to the larger houses, with four or more bedrooms, 1·8 per cent of dwellings completed in both 1954 and 1955 has risen to 2·1 per cent for dwellings in tenders approved in

* *Report of the Ministry of Housing & Local Government for the year 1955.* (C.M.D. 9876. H.M.S.O. 6s net.)

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Type	Depth Approx.	Wt. lbs. per sq. foot	Effective Span in Feet (Centre to Centre supports)																													
			10'	11'	12'	13'	14'	15'	16'	17'	18'	19'	20'	21'	22'	23'	24'	25'	26'	27'	28'	29'	30'	31'	32'	33'	34'	35'	36'	37'	38'	39'	40'	41'
14	7¼"	3.0	32	30	28	26	25																									
20	7¼"	3.5				74	59	48	40	33	28	26	25																			
24	9¼"	3.75						77	68	57	48	40	35	30	27	26	25															
28	11¼"	4.0										76	65	56	49	43	37	33	29	26	25											
35	15¼"	4.75																	63	56	50	45	41	37	34	32	28	25				
41	*15¾"	5.25																									41	37	34	31	29	27	26	25

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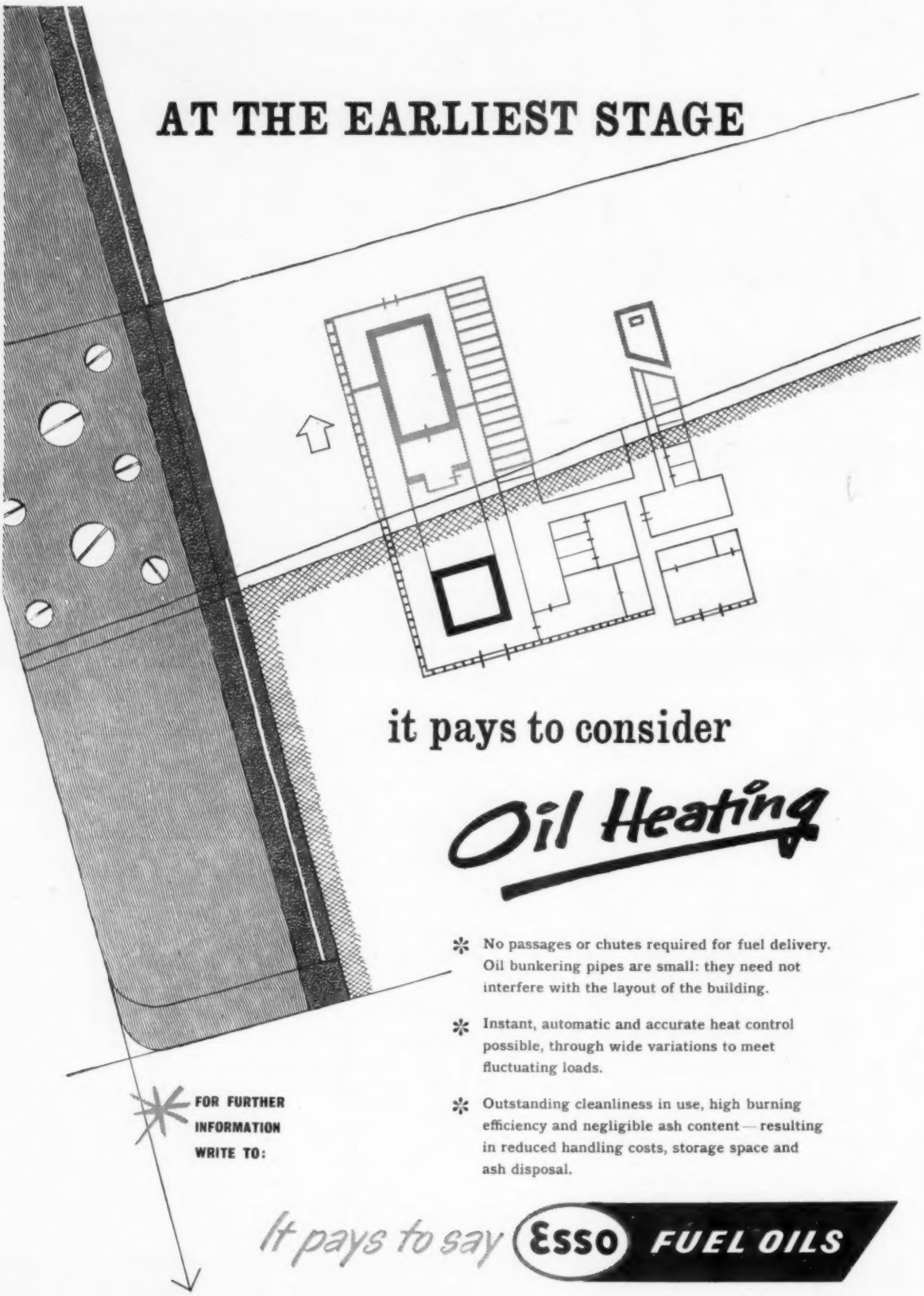

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M.H. & L.G. Report

1955 and is thus moving back towards the average of 2·9 per cent for dwellings completed between 1945-1953. It is possible that this is accounted for by the fact that those with large families are forced to approach the Local Authorities for their housing for economic reasons and also that large houses of the type required are not provided by private enterprise at prices that large families can afford.

On the subject of sale of council houses the Report showed that since permission to sell was given in 1952, up to the end of 1955, 357 Local Authorities and Development Corporations had disposed of 5,435 houses in all, of which 2,360 were sold in 1955. In view of the very considerable number of Local Authority houses built, it would seem that either the tenants are not very willing buyers or possibly Local Authorities are not very willing sellers, or alternatively, occupiers have not the necessary small capital needed.

A paragraph on the subject of temporary houses which were erected under the Housing (Temporary Accommodation) Act of 1954 is interesting. In all some 124,000 temporary houses were erected. Of these about 1,400 had been removed by the end of 1955 to make way for redevelopment or on account of damage by fire, etc. Several of the Local Authorities, however, have brought their temporary houses to a number of about 800. In 1955 the Department asked Local Authorities to make a broad assessment of the likely rate at which temporary houses would fall due for removal; the replies indicated that about 15,000 were to be removed during the years 1956-59 with a further 20,000 during 1960-64, leaving some 87,000 unaccounted for, which draws the comment in the Report : "It was clear that many of the temporary houses still had a long life and this no doubt prompted some Local Authorities to make the purchases referred to above". Perhaps it is proving that certain types of temporary houses are in fact as permanent as some "permanent" houses.

There is a brief reference to the development work in housing which the Ministry has undertaken. It appears that this consists, in the main, of the Ministry's architects, working with the B.R.S. and selected Local Authorities, developing new constructional methods on the cross-wall principle for application in building two-storey houses and four-storey blocks of maisonettes. The Harlow New Town Development Corporation decided to build a number of houses and flats to the Ministry's Model Plans. A point which is perhaps not at all clear in references to "traditional" and "new tradition" houses is quite what constitutes "traditional" because there are developments which are by no means traditional, for example, is a house with a brick outer skin and a lightweight concrete inner skin traditional or new tradition? It certainly is a method which is an innovation widely adopted only since the war.

In regard to this development work it seems surprising that neither the Local Authorities, the Ministry nor the B.R.S. appear to have devoted more attention to trying to develop acceptable new tradition methods of construction which are economic and provide plans, equipment and elevations to meet the general trend of current design in other spheres. One is inclined to wonder whether there is not in all these places a preference for traditional methods among the staffs working on these problems; or is it that they have merely failed to seek the co-operation of the suppliers of the non-traditional forms of construction because this would complicate obtaining tenders?

The Report contains a reference to architects' fees. It is at least gratifying to see the recommendation to Local Authorities for the adoption of the scale of better fees. These fees, however, are still far too low to obtain the best services from the profession. They do not in any way appear to make possible payment of the scales of salaries to staff and profits to the employers in line with the scales paid to others employed by Local Authorities.

In regard to slum clearance the Report sets out to stress that the Minister is looking on this work as of vital importance in the immediate future. Under the Housing Repairs and Rents Act of 1954 Local Authorities were asked to submit their proposals for dealing with slum houses in their area. Up to the end of 1955 over 500 proposals had already received the Minister's approval. The Report states that of just over 13 million permanent houses in England and Wales about 850,000 (6·5 per cent) were estimated to be unfit for human habitation. One is inclined to have a feeling that even this assessment is very kind towards the existing accommodation when compared with the accommodation, equipment and facilities provided in post-war housing and, if it was not for reasons of economics, Local Authorities would probably be disposed to suggest that this should in fact be a much higher figure. It is said that more than half the Local Authorities have indicated they plan to clear all their slums in the first five years and that this would represent 44 per cent of the estimated total of unfit houses.

In regard to the matter of Building Bylaws little of great note is included in the Report as having arisen during the year. No steps appear yet to have been taken to prepare for the next revision of the Bylaws or for any changes in legislation such as have been under discussion in Scotland for several years.

A very brief reference is made to the Clean Air Bill which was introduced during the year, but only received Royal Assent in July of this year. This Bill is of very considerable importance since it is likely to have its effect on almost everyone in the country.

There is a brief paragraph on the subject of crematoria. The number of cremations rose to 125,500 in 1954 and existing crematoria are consequently being used to capacity with the result that many Local Authorities have felt the need for additional facilities to meet the increased demand for cremation and to relieve the pressure on land for burials. The Minister approved the construction of a further 10 new crematoria during the period of the Report and four were completed. At the end of 1955 there were 72 crematoria in England and Wales.

There are quite long reports on water and sewage. In regard to water it is clear that the Minister is pressing the Water Undertakings to regroup themselves as rapidly as possible so as to produce units "strong enough financially to promote and supervise necessary capital works and to employ the expert staff needed for the safe and economic day-to-day running of the undertakings". Certain regrouping which took place in the year is reviewed.

In regard to Water Bylaws it was said that when the revised edition of the Ministry's Model Bylaws was published in the autumn of 1954 little more than 200 Water Undertakings had Bylaws in operation At the end of 1955 the number of undertakings with confirmed Bylaws was about 850. This adoption of the Model Bylaws should facilitate the general trend towards the standardization of requirements and thus eliminate many difficulties for those who specify or contract for installations.

DUTCH UNCLE

Industrial Notes

● The sixth Electrical Engineers (ASEE) Exhibition is to be held at Earls Court, London, April 9-13, 1957. It will occupy two floors and cover an area of some 330,000 sq ft. More than 350 firms have already said they will take part, and a number of previous exhibitors have requested additional floor space. All types of electrical equipment, both domestic and industrial, will be on view. There will be a special educational feature incorporating Industry, Government Services, Trade Organizations and H.M. Forces.

● Referring to the Census of Production for 1956, an order has now been made by the Board of Trade prescribing matters about which returns may be required. The order which operates from December 31, 1956 is the Census of Production (1957) (Returns and Exempted Persons) Order, 1956 (S.I. 1956 No. 1648). Copies may be obtained from H.M.S.O. Kingsway, London, W.C.2, and branches, or through any bookseller (price 3d, by post 5d).

● Chemstrand Ltd., have awarded to Constain-John Brown Ltd., of London, a £3,500,000 contract for the complete design and construction of an acrilan acrylic fibre plant near Coleraine, Northern Ireland. The plant will produce 10,000,000lb of acrilan fibre a year and is due for completion in about two years.

● A new filmstrip, entitled "Upholstering an easy chair with Latex Foam", has been prepared for the guidance of furniture students. The strip consists of 26 frames and is supplied with a frame by frame commentary in booklet form, by Dennis Young, the furniture designer. Copies of the filmstrip are available, on loan, free of charge, or may be bought for 3/- from the Natural Rubber Development Board, Market Buildings, Mark Lane, London, E.C.3.

● The Ballast Sand and Allied Trades Association of 48 Park Street, London, W.1, have changed their name to The Sand and Gravel Association of Great Britain. The address and telephone number are unchanged but the telegraphic address is now, Sagano, Audley, London.

● Matthew Spears and Company of Kirkcaldy, Fife are now constructing laminated timber structures. They have completed a first contract for 32 roofs trusses, each 56 ft. in length and weighing 16 cwts. The trusses are for use in a new warehouse now under construction in Newhaven.

● Remington Rand Ltd., of 1-19 New Oxford Street, London, W.C.1, announce the formation of an Electronics Division. Mr. C. W. Elliott has been appointed National Sales Manager and head of the new division.

● Kosset Carpets Ltd., have appointed Mr. Barclay Inglis as General Manager in place of Mr. J. H. Lemon who returns to Brintons Ltd., as General Manager and Director. Mr. H. Payne has taken over the London and South Eastern sales area.

● Pilkington Bros. Ltd., announce that Dr. W. L. Patrick, formerly General Manager of their Doncaster works, has been appointed a Local Director of the Company.

● Mr. Dennis Rider has been appointed Director of the Glass Manufacturers' Federation. Mr. Rider was previously Secretary to the Federation and is also chief executive of several other organizations of glass manufacturers, including the European Glass Container Manufacturers' Committee.

● The British Transport Commission announce the appointment of the Hon. Anthony G. Berry and Mr. P. T. Heady as members of their Western Area Board.

● Mancuna Engineering Ltd., have recently moved their London Sales and Design Office to 59 Victoria Road, Surbiton, Surrey—telephone: Elmbridge 9793. This office covers the South of England and South Wales and is under the managership of Mr. R. A. LePage. Mr. N. S. Stedman will be responsible for the design work of the London Office.

● Surrey Concrete Ltd., of Peasmarsh, Guildford, Surrey, announce that the title of the company has been changed to Marley Concrete Ltd. The other concrete companies in the Marley Group already bear this name.

● Stothert & Pitt Ltd., announce a record profit of £413,324 for the year ended June 30. This is £9,347 higher than for the preceding twelve months. A final dividend of 12½ per cent has been declared.

● The Cementation Co., announce record profits of £373,346 for the past year, representing an increase of £15,016 on the results of the previous twelve months. The dividend remains at 12½ per cent.

● Cannon (Holdings), makers of domestic gas appliances, are paying a final dividend of 10 per cent for the year ended June 30 despite a very considerable drop in profits. Profit, before deducting tax, was only £1,847 against £323,077 for the previous year's working. They state that the dividend decision was influenced by an encouraging recent recovery in sales.

● The net profit of the Crittall Group, after deduction of tax, rose from £241,939 to £333,407 for the year ended August 31. A final dividend of 10 per cent has been declared.

● Qualcast Ltd., show an increase of 9.7 per cent in turnover, a record, for the year ended June 30, 1956. Profits are £800,567 before taxation compared with the previous result of £771,314 and a final dividend of 16½ per cent has been declared.

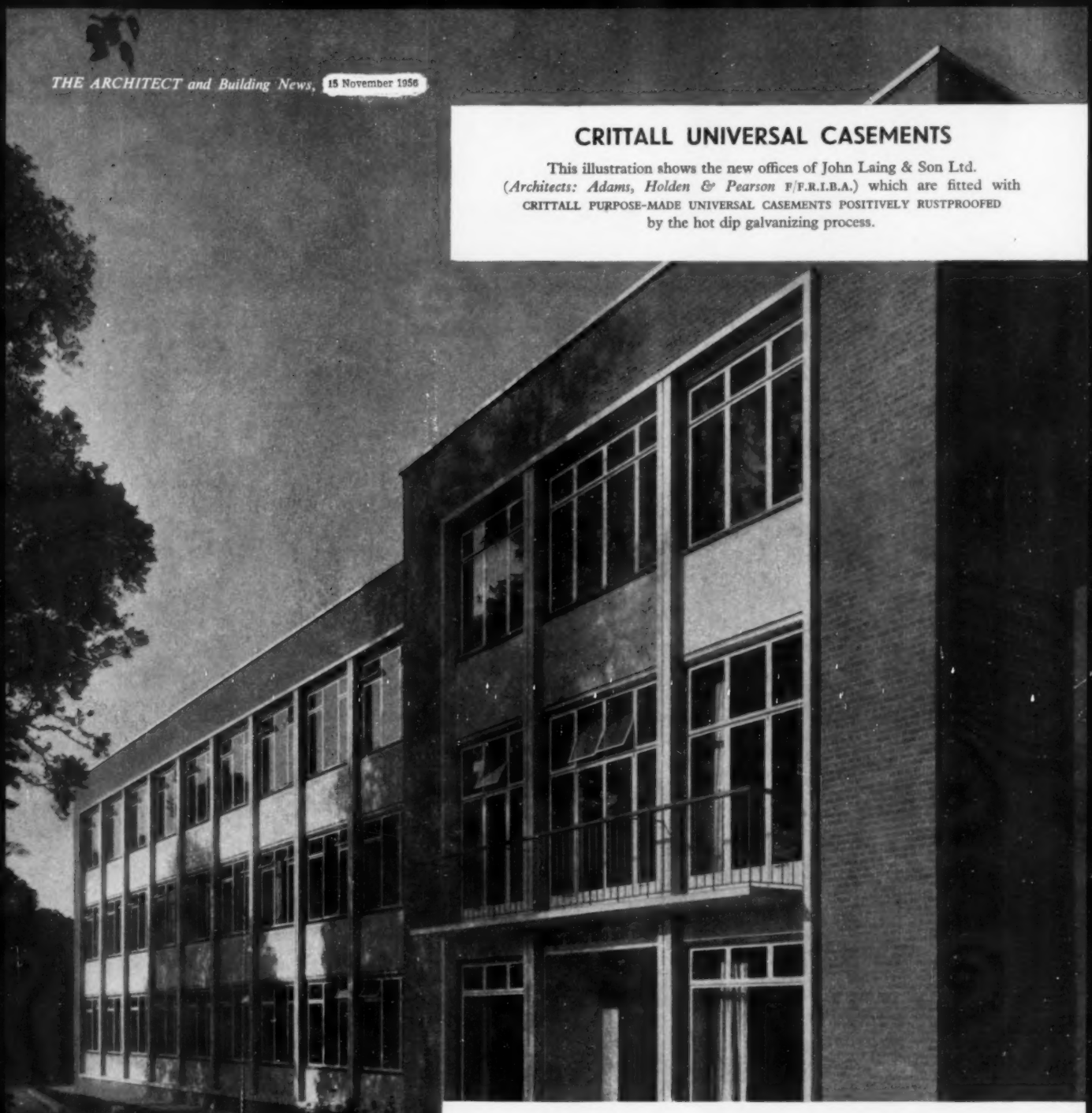
● Midhurst Whites Ltd., brick manufacturers, show a profit after taxation of £20,023 which is an increase of £5,825 on the working of the previous twelve months. A dividend of 22½ per cent has been declared.

● The profit, after deduction of tax, of the Crompton Parkinson Group, for the year ended June 30, amounted to £996,002. This represents an increase of £55,267 on the result of the previous twelve months and a final dividend of 6 per cent together with a cash bonus of 6 per cent has been declared.

W. T. Henley's Telegraph Works Co. Ltd. recently held a staff Dinner and Dance at the Dorchester Hotel at which the Chairman, Sir John Dalton was in the chair. This was followed on October 26 by a visit and luncheon at the Gravesend Works to celebrate its Golden Jubilee. The picture gives a view of the Rosherville Gardens, Gravesend as they were in 1843. The site previously occupied by the Gardens now houses Henley's engineering works, administrative offices, drum-making and carpenters' shop

CRITTALL UNIVERSAL CASEMENTS

This illustration shows the new offices of John Laing & Son Ltd. (*Architects: Adams, Holden & Pearson* F/F.R.I.B.A.) which are fitted with CRITTALL PURPOSE-MADE UNIVERSAL CASEMENTS POSITIVELY RUSTPROOFED by the hot dip galvanizing process.



In all of Crittalls' long experience in the making of windows no year has passed without some substantial advance in design or manufacturing technique. It is because Crittalls are never content to rest merely on past achievements; because tomorrow's methods, designs and conceptions of service must be anticipated today, that Crittalls' reputation has reached its high level.

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Branches and Depots throughout the country

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ARE IN ALL GOOD PAINTS

because they give–**brightest whites**
cleanest pastel shades
greatest covering power
longest life with complete protection

and they are–**completely non-toxic**

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TITANIUM PIGMENTS
are made in Britain by
British Titan Products Company Limited
the largest Titanium Oxide manufacturer
outside the United States

Factories at Grimsby and Billingham and at Burnie, Tasmania
Agents in most principal countries

BRITISH TITAN PRODUCTS COMPANY LIMITED
COPPERGATE
YORK

NEW PRODUCTS

In this feature are reviewed new lines introduced to the building industry for the first time and additions or improvements to existing ones. Any advantages claimed for a product are from information supplied by the manufacturer

NETTLE Accessories have recently introduced a flanged backplate, Fig. 1, with fixing holes at 2in centres to accommodate the standard rose or battenholder. Our picture shows the backplate in position on both of these. It has five knockouts, four sizes for 2-core cable and the centre for 3-core. It is claimed that it enables the contractor to comply with clause 207G, page 29 of the latest "Regulations for the Electrical Equipment of Buildings" issued by I.E.E.

Nettle Accessories Ltd., Harper Road, Wythenshawe, Manchester, 22. Wythenshawe 4321.

★

Penfold & Partners announce the introduction of a new automatic air sterilizer, Fig. 2. The unit, in which air is drawn through filters by a fan and then irradiated, can be operated from an ordinary light socket. It is intended for use in conditions where air is required to be exceptionally free from bacteria, fungal and yeast spores. The unit itself is surrounded by a metal case, 8in by 9in by 3ft long. It comprises a special fan motor designed to last for life without service of any kind. The irradiation tubes can be replaced as required. It is expected to be used in hospitals, laboratories and by food manufacturers.

Penfold & Partners, 120 Victoria Street, London, S.W.1. Victoria 8642.

★

The Cob 300 oil-fired heat exchanger Fig. 3, has recently been introduced by Vaporheat Ltd. It has been designed for connection to ducted systems and to utilize Woods of Colchester Aerofoil fans. Air volume and pressures developed can be arranged to suit most applications within the range of duties listed for these fans i.e., volumes from 1,000 to 55,000 c.f.m. and pressures from free air to 20in w.g. It has a heat output of 300,000 B.Th.U/Hr. and is constructed from heat resisting stainless steel. Heat source in an MDE Model II fully automatic pressure jet oil burner. The unit is thermostatically controlled and completely automatic. Oil consumption is 2¼ Imp.galls/hr. on 35 secs. Redwood I at 100 deg. F.

Vaporheat Ltd., 47 Victoria Street, London, S.W.1. Abbey 3576.

★

The latest addition to the Easiclene range is a wash boiler, Fig. 4. It has a vitreous enamelled 8-gall. capacity tub with a 3kW. immersion heater situated in the base. The heater cover-plate is specially designed to give jet action to the water. There is a 3-heat control switch and a red warning light operates when the heater is switched on. The tub may be emptied without tilting and the machine, which has towel rail on the front of tub, is castor mounted. Dimensions 16in x 16in x 28in high. Finish: above waistband, vitreous enamel white, cream or eau-de-nil; below waistband, stove enamel white, cream, eau-de-nil, blue or red.

Easiclene Porcelain-Enamel (1938) *Ltd., P.O. Box 10, Darlaston, Wednesbury, Staffs. Jamesbridge* 3131.

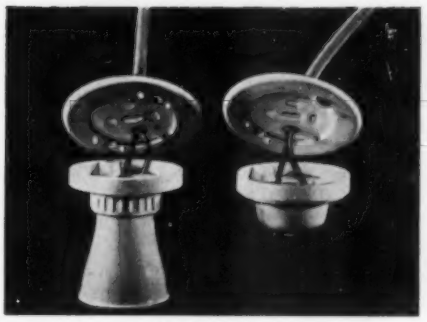
★

The HO.12 single oven unit, Fig. 5, is an addition to the G.E.C. range. It has a roasting oven with hob above it and is designed to cook for about forty people. It is made in such a way that multiples can be mounted side by side, or back to back and built up to make multi-oven units. Thermostatic control of the oven and three-heat rotary switches for the hot plates are embodied. The oven is 16½in wide by 22in high by 18in deep, with total capacity of 3¾ cu. ft. Overall measurements are 30½in wide x 25in high x 34in deep. Finished mottled grey vitreous enamel and suitable for single phase A.C. or three phase four wire A.C. supply. Loading 10.9kW.

General Electric Co. Ltd., Magnet House, Kingsway, W.C.2. Temple Bar 8000.

★

The H.F.N. high frequency neon sign has recently been introduced. The equipment consists of a board which is plugged into an ordinary 5-amp socket. The letters themselves have no wires attached to them and are claimed to be completely safe to handle. In fact they may be fixed or taken away from the board when it is in use or re-arranged as desired. The board has been designed to carry 36 characters but up to 45 can be used



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5

New Products

if necessary. Flashing is obtained by turning the knob provided. Invented by M. Robert Rousseau, the sign will be marketed in Great Britain under the name of Winstoneon. The equipment operates from A.C. mains voltage of 200/250 and power consumption is 100W.

Winston Electronics Ltd., Shepperton, Middlesex. Walton-on-Thames 6321.

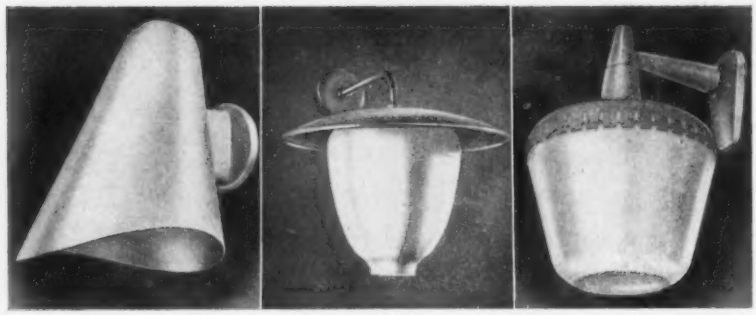
★

Falks have recently introduced three weatherproof outdoor lanterns, Fig. 6, left—Tyrone, centre—Lonsdale and right—Viceroy. The Tyrone has an anodised aluminium reflector 10½in high, mounted on a 1¾in projection cast alloy bracket supported with quadrant plate. Finished in blue-grey stove enamel, it projects 10in from the wall and is suitable for 100/150W lamps. The Lonsdale projects 14in from wall and measures 12 7/16in from top of wall fixing to base of the 7in overall dia glassware. It is suitable for 75/100W lamps. The M.S. arm, the aluminium fixing plate cover and reflector top are finished in blue-grey stove enamel and inside of the reflector is white. The Viceroy is 13 5/16in overall in height and projects 10 9/16in from the wall. The glassware in 9in overall dia. The aluminium reflector and wall-bracket are finished stove enamelled blue-grey whilst the inside of the reflector is white.

Falk Stadelmann & Co. Ltd., 91 *Farringdon Road, London, E.C.*1. *Holborn* 7654.

★

The Adonis instantaneous water heater, Fig. 7, can be connected direct to the mains or to a tank supply and can be controlled from the outlet point. It is claimed that it will operate with equal efficiency as a single point heater or fixed away from the sink and used as a small multi-point unit. The heater fits flush to the wall and gas and water connections may be run vertically upwards to the base or attached



6

through the back casing to a standard jigged wall fitting. Output figures are 0.46 galls/min. raised 100 deg. F. and 0.58 galls/min. raised 80 deg. F. and gas rating is 37,500 B.Th.U/hr. Dimensions: 15in high, with outlet spout projecting 7in further below heater, by 10in wide by 7½in deep. Finish: White, cream, blue or green vitreous enamalled outer casing, black enamel products deflector and chromium plated swivelling spout.

R. & A. Main Ltd., 48 *Grosvenor Gardens, London, S.W.*1. *Sloan* 6241.

★

The Hamworthy Rotary Oil Burner, Fig. 8, provides fully automatic oil firing with burner outputs automatically modulated to meet exact steam or hot water requirements. It is designed to deal with the cheapest high viscosity oils even up to 6000 Redwood No. 1 secs. It operates on the rotary cup method of atomization which, in conjunction with the fuel oil metering system, obviates the need for high oil temperatures or pressures. It is available in eleven sizes with outputs from 6 to 150 galls. hr. It is claimed that the electrical control panel ensures that the boiler is purged of possible explosive gases both before and after burner runs. A fast acting photo-electric cell cuts off the oil in the event of flame failure.

Hamworthy Engineering Ltd., Fleets Corner, Poole, Dorset. Poole 2020.

★

A further seven shades have now been added to the Sisco Lac range and a shade card showing the full range of twenty-two colours is available from the makers. This Chinese Lacquer is also available in silver, black, white and clear.

Siscomatte, the rubberised flat wall finish, is now manufactured in a range of 30 colours and white. 14 colours from the B.S. 2660 range have recently been added, these are : pale ivory, fawn, duck egg, suede, oyster, smoke blue, eggshell blue, sky blue, coral, lilac, mid quaker grey, French grey, dove grey and flesh.

Sissons Bros & Co. Ltd., Bankside, Hull. Hull 15030.

★

Standard units are not usually sold by cast stone firms, but a range of these is now offered by Kendell's Stone & Paving Co. Ltd. It includes plain weathered cills, copings and window surrounds, suitable for use with all sizes of door and window frames. These are available from stock. An interesting item is an ornamental type of door entrance, porch hood and window surround offered as a standard item.

Kendell's Stone & Paving Co. Ltd., Barnettwood Lane, Leatherhead, Surrey.

★

Fleetwood Paints Ltd. have introduced a new type of synthetic enamel which is claimed to be completely free from odour. Duramel odourless enamel is obtainable in a gloss, semi-gloss or flat finish, together with the appropriate undercoats, in a range of 90 colours.

Fleetwood Paints Ltd., Camgate Works, Long Lane, Stanwell, Middlesex. Ashford (Middx.) 3651.

★

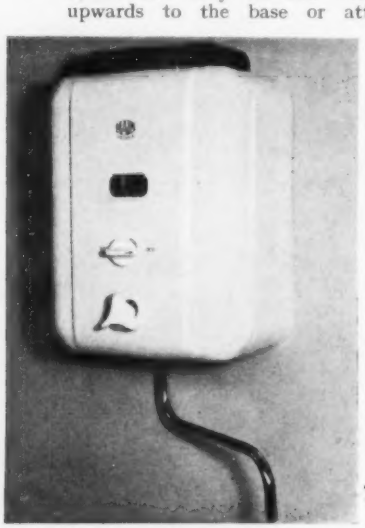
Stardust Red, a bright, almost cherry colour, has been added to the Warerite range of approximately 100 patterns and colours. It is claimed to be particularly suitable for use in contemporary decor and to create a warmer atmosphere than other reds in the range.

Bakelite Ltd., 53 *New Oxford Street, London, W.C.*1. *Covent Garden* 0745.

★

A new venture for Clay Cross Ltd. is the introduction of Polythene tubing. "CXC" tubing is in the range of ¼in to 2in diameter and is in compliance with BSS 1972.

Clay Cross (Iron & Foundries) Ltd., Clay Cross, Derbyshire.



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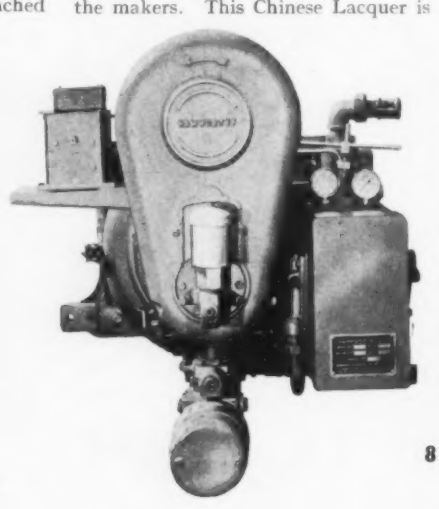

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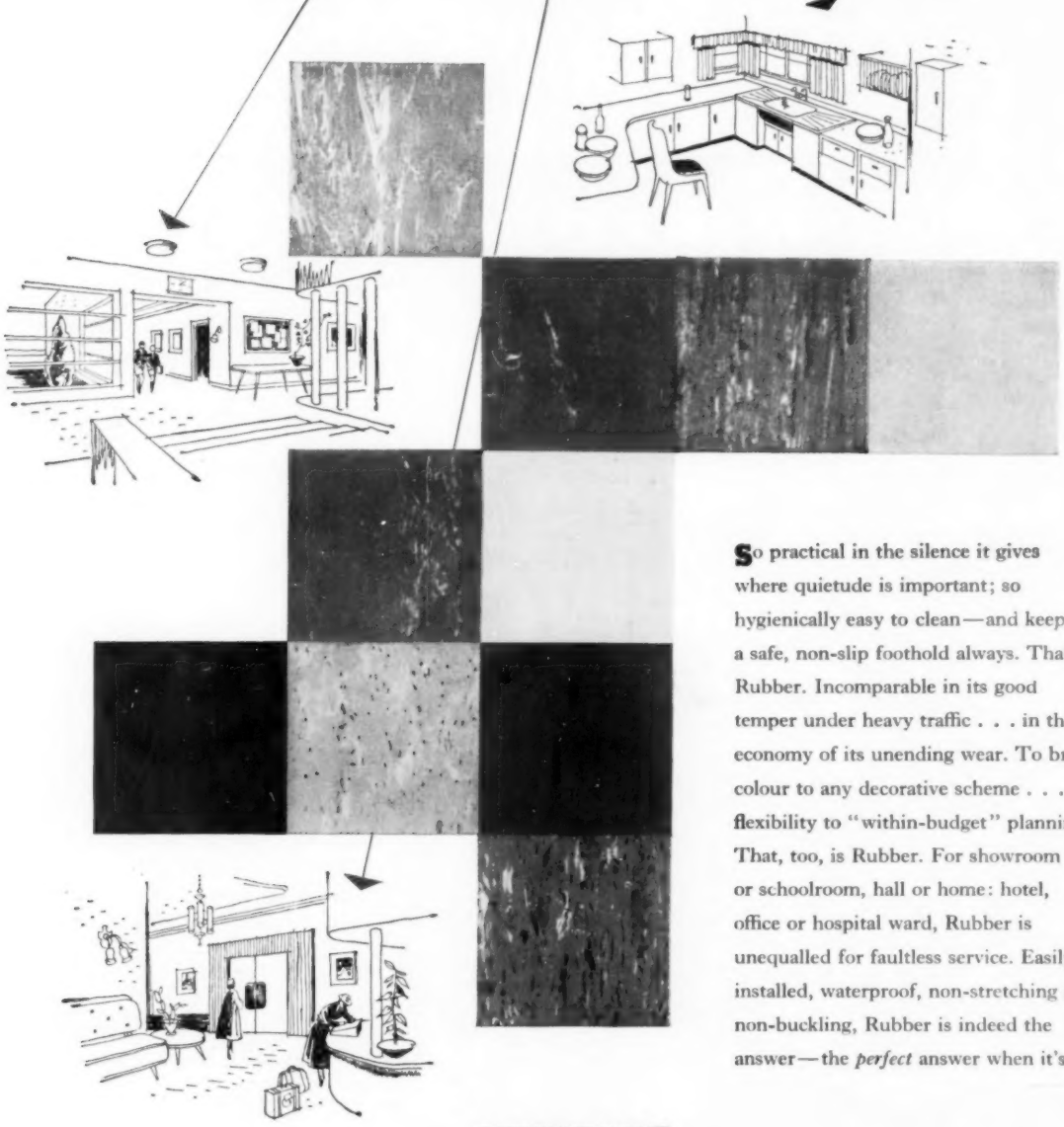

So practical in the silence it gives where quietude is important; so hygienically easy to clean—and keep clean; a safe, non-slip foothold always. That's Rubber. Incomparable in its good temper under heavy traffic . . . in the economy of its unending wear. To bring colour to any decorative scheme . . . flexibility to "within-budget" planning. That, too, is Rubber. For showroom or schoolroom, hall or home: hotel, office or hospital ward, Rubber is unequalled for faultless service. Easily installed, waterproof, non-stretching and non-buckling, Rubber is indeed the answer—the *perfect* answer when it's

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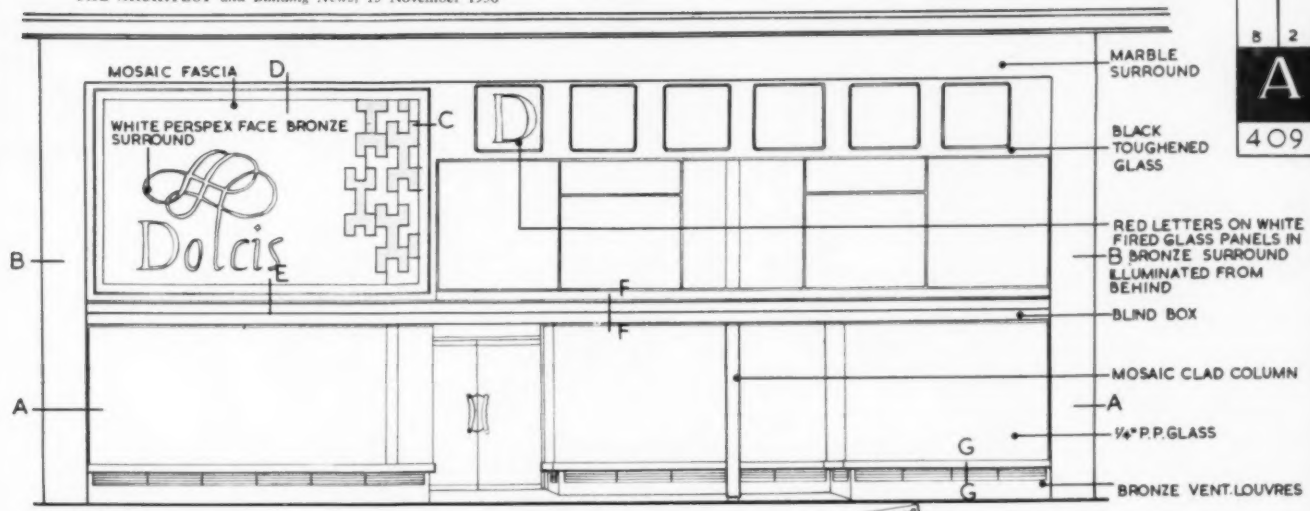
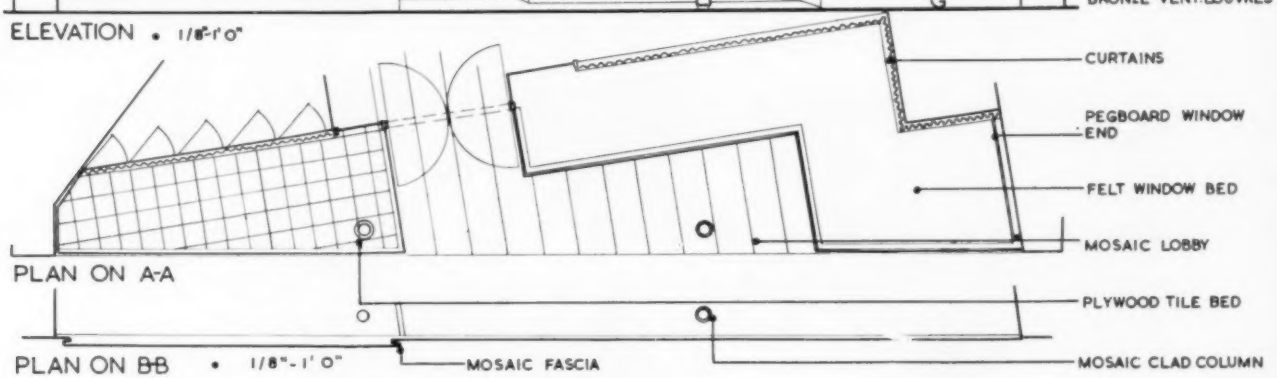
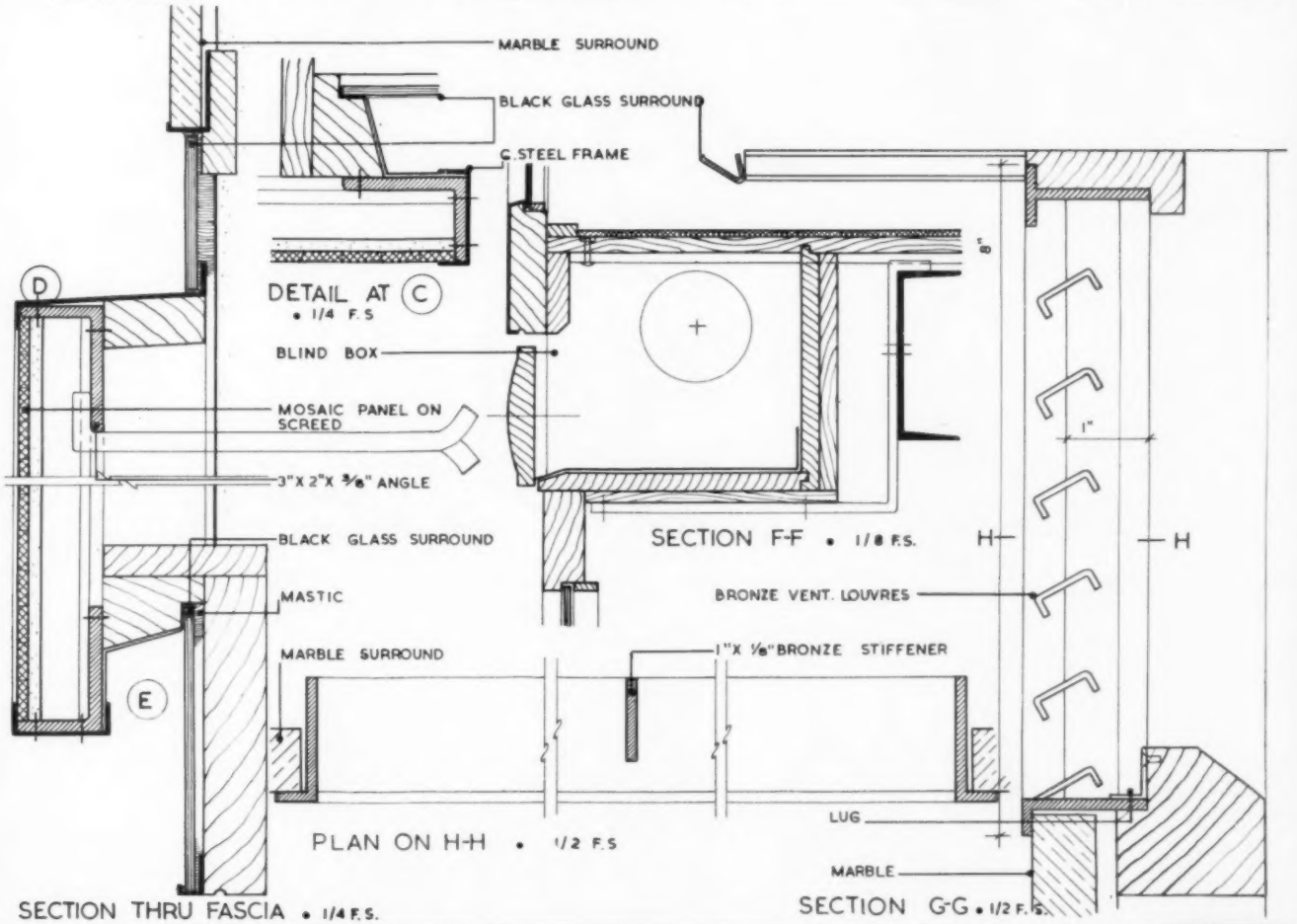


ELEVATION • 1/8"-1'0"



PLAN ON A-A

PLAN ON B-B • 1/8"-1'0"



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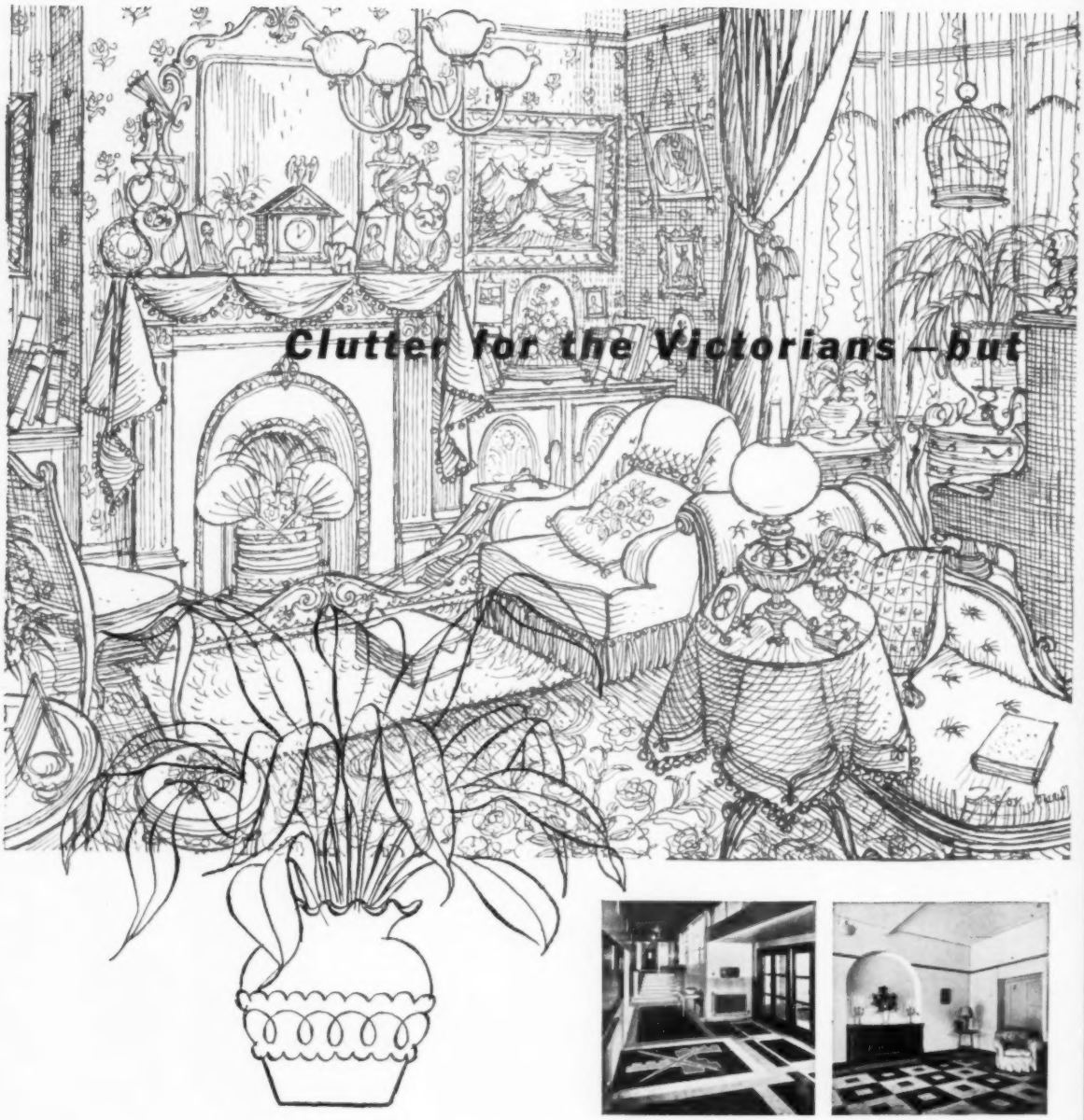
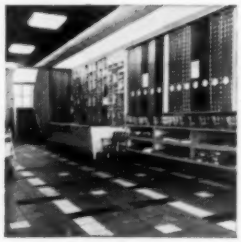
ARCHITECT· ELLIS E. SOMAKE

Ballroom at Butlin's Holiday Camp
Pwllheli, Caernarvon
Designed by W E. Butlin

Show floorthought with MARLEY tiles


Clutter for the Victorians – but



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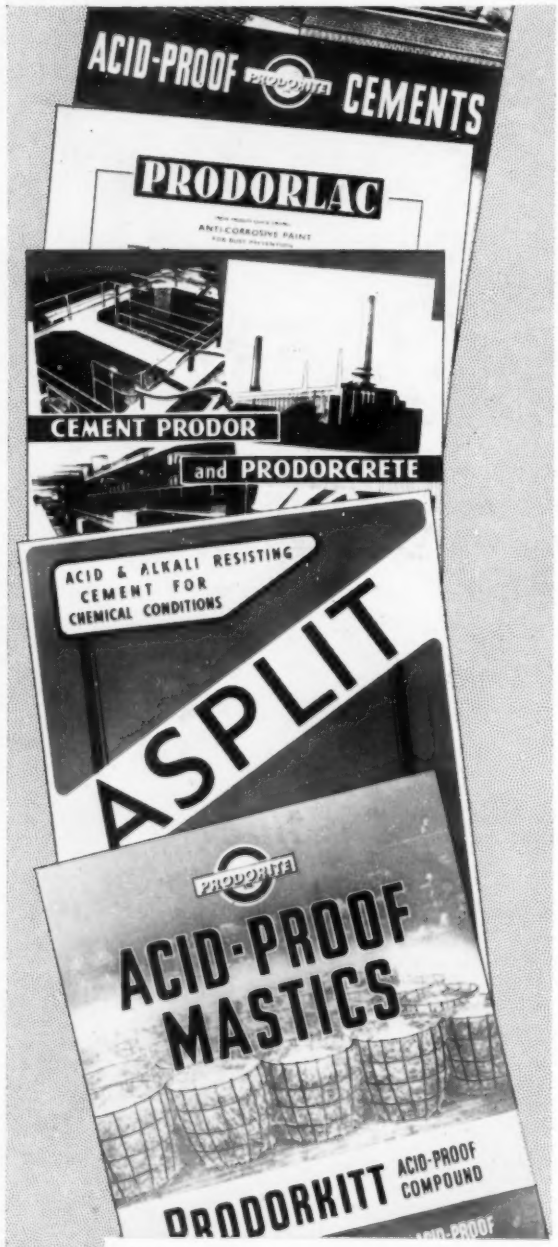

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CONTRACT • NEWS •

*Notes below give basic data of contracts open under locality and authority which are in a bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date of application, (e) last date and time for submission of tenders. Full details of contracts marked * are given in the advertisement section.*

OPEN

BUILDING

BICESTER U.C. (a) Three blocks of four flats each and one pair of houses on north No. 1 site (b) Harry W. Smith and Son, 29 George Street, Oxford. (c) 2gns. (e) November 27.

* * *

BOLTON B.C. (a) 48 dwellings at the East Ward Redevelopment Area, Bolton. (b) Housing Director, Town Hall, Bolton. (c) 2gns. (e) December 10.

* * *

BUCKS C.C. (a) Erection of a new secondary school at Cippenham, estimated at £145,000, to be completed within 15 months. Date of commencement will be March, 1957. (b) Council's Clerk, County Hall, Aylesbury, with an assurance that applicant has the resources, in the light of commitments to carry out the work in the time stated, and, in particular, that suitable labour is available, by importation or otherwise. (d) November 24.

* * *

BUCKS C.C. (a) Completion of Phase III of the College of Further Education at High Wycombe, estimated at £50,000. (b) Council's Clerk, County Hall, Aylesbury. (d) November 30.

* * *

BUCKS C.C. (a) (1) New school accommodation at Oakley Parochial school; (2) provision of additional accommodation at Chesham junior technical school; (3) first instalment of new school at Chalfont St. Peter; (4) new sanitary offices at Amersham, St. George's C.E. school; (5) reorganization of lavatory accommodation at Wolverton C. school; (6) conversion of farm buildings into changing room accommodation at Bletchley Park training college; (7) reorganization of lavatory accommodation at Newport Pagnell C. school; (8) improved sanitary accommodation at Slough, Godolphin C. junior school; (9) improvements to sanitary block at Winslow C. of E. school; (10) improvements to kitchen and provision of new dining room at Shenley Church End C.P. school; (11) provision of central heating at Wolverton C. school; (12) installation of central heating and electricity at Chesham, Waterside C. infant school; (13) provision of central heating at Fulmer C. primary school; (14) provision of waterborne sanitation at Filgrave C. of E. primary school; (15) improved washing facilities at Gawcott C.P. school; and (16) installation of central heating at Chalfont St. Giles C.P. school. (b) County Architect, County Offices, Aylesbury. (d) November 30. (e) February 4.

* * *

CHELMSFORD B.C. (a) 18 bungalows at Andrews Place. (b) Borough Engineer, Municipal Offices, Duke Street, Chelmsford. (c) 2gns. (e) November 30.

* * *

CORNWALL C.C. (a) Erection of a new dining room, kitchen and needlework room at the Truro secondary school for girls. (b) Sydney Gregson, "Keighley", Tregolls Road, Truro. (c) 1gn. (d) November 24. (e) January 9.

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CUMBERLAND C.C. (a) Additional classrooms and toilet accommodation at Seascale primary school. (b) County Architect, 15 Portland Square, Carlisle. (e) November 30.

* * *

DROYLSDEN U.C. (a) 66 flats and 32 maisonettes on Gloucester Road estate. (b) Mr. Frank Bradley, Penny Bank Chambers, Wood Street, Bolton. (c) 2gns. (e) December 4.

* * *

DUNMOW R.C. (a) 13 dwellings on Broomfields estate, Hatfield Heath. (b) Council's Clerk, Council Offices. (c) 3gns. (e) December 3.

* * *

EAST BARNET U.C. (a) Contract No. 828. Two houses and 12 flats. (b) Council's Engineer, Town Hall, Station Road, New Barnet, Herts. (c) 2gns. (e) December 15.

* * *

EAST RIDING OF YORKSHIRE C.C. (a) Erection of a secondary school at Willerby, nr. Hull. (b) County Architect, County Hall, Beverley. (c) £2. (e) December 10.

* * *

EAST SUSSEX C.C. (a) Caretaker's house at Battle secondary school. (b) County Architect, County Hall, Lewes. (d) November 21.

* * *

EIRE—DUNDALK U.C. (a) 156 houses and ancillary works at Cox's Demesne, Dundalk. (b) Town Clerk, Town Hall. (c) £25. (e) December 10.

* * *

ESSEX C.C. (a) Erection of Basildon The Moathouse E.S.N. school. Approx. cost £35,000. (b) County Architect, County Hall, Chelmsford. (d) November 24.

* * *

ESSEX C.C. (a) Erection of Basildon Fryerns The Bryn primary school. Approx. cost £90,000. (b) County Architect, County Hall, Chelmsford. (d) November 17.

* * *

ESSEX C.C. (a) Erection of Corringham junior school. Approx. cost £50,000. (b) County Architect, County Hall, Chelmsford. (d) November 17.

* * *

HAMPSHIRE C.C. (a) Erection of secondary schools at Fleet, Fareham, Gosport, Hythe and Ringwood. (b) County Architect, The Castle, Winchester. (d) November 26

* * *

HAMPSHIRE C.C. (a) Erection of proposed Christchurch Somerford infants' school. (b) County Architect, The Castle, Winchester. (e) January 2.

* * *

LEEDS REGIONAL HOSPITAL BOARD. (a) Carrying out alterations to provide cubicle accommodation in the administrative block at St. Mary's Hospital, Armley, Leeds, 12. (b) Board's Architect, Park Parade, Harrogate, Yorks. (c) 2gns. (d) November 21. (e) December 12.

LEEDS REGIONAL HOSPITAL BOARD. (a) Carrying out a large scheme of alterations at St. John's Hospital, Fell Lane, Keighley. (b) Board's Architect, Park Parade, Harrogate, Yorks. (c) 2gns. (d) November 20. (e) December 18.

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MAIDSTONE B.C. (a) Carrying out renovations and adaptations to the Master's House, Old College. (b) Borough Surveyor, Palace Avenue. (d) November 23.

* * *

MANCHESTER CORPORATION. (a) Carrying out alterations to central school meals kitchen. (b) City Architect, P.O. Box No. 488. Town Hall. (e) November 28.

NEWCASTLE UPON TYNE C.C. (a) 104 flats and maisonettes in three storeys, on the Kenton North Estate, Groups 13, 20 and 23. (b) City Architect, 18 Cloth Market, in writing. (e) November 29.

* * *

NEW FOREST R.C. (a) (Contract No. 7) 10 pairs of houses at Site No. 53 Langdown Croft, Hythe; and (Contract No. 1) 7 pairs of houses at Site No. 66 Stag Meadow, Lyndhurst. (b) Council's Engineer, Appletree Court, Lyndhurst. (c) 2gns each contract. (e) November 26.

* * *

N. IRELAND—ANTRIM E.C. (a) Erection of (1) proposed new primary school at Kilmoyle, nr. Ballymoney; (2) proposed new primary school at Straidhavern, Nutt's Corner, Crumlin; and (3) proposed assembly/dining room at Ballymena Model school, Ballymena. (b) Crofton G. Dalzell, 6 Bath Street, Portrush. (c) £5 each school. (e) November 28.

* * *

N. IRELAND—BELFAST. (a) (1) Structural steelwork, including supply, delivery and erection; (2) lintel reinforcement and isolated beams, including supply and delivery only, for new intermediate girls' school, for the Sisters of Mercy, Crumlin Road, Belfast. (b) Frank McArdle, "Brookhampton", Andersonstown, Belfast. (c) 5gns, by cheque. (e) November 26.

* * *

N. IRELAND—MINISTRY OF FINANCE. (a) Construction of an auto-manual telephone exchange and extension to Post Office sorting office at Rainey Street, Magherafelt, Londonderry. (b) Ministry of Finance, Room 103, Law Courts Building, May Street, Belfast. (c) £5. (e) November 30.

* * *

N. IRELAND—MINISTRY OF FINANCE. (a) Carrying out an extension and adaptations to Ormeau Telephone Exchange, Ormeau Road, Belfast. (b) Ministry of Finance, Room 103, Law Courts Building, May Street, Belfast. (c) £5. (e) December 5.

* * *

NOTTINGHAM C.C. (a) Construction of a sports stadium on the Bilborough Park site, between Wigman Road and Beechdale Road, Nottingham. (b) Director of Parks, Woodthorpe Grange, Nottingham. (c) 2gns, by cheque, payable to Corporation. (e) December 14.

* * *

PLYMOUTH C.C. (a) Erection of a secondary school at Barne Barton, St. Budeaux, Plymouth. (b) City Architect, Seymour Road. (c) 3gns, payable to Corporation. (d) November 20.

* * *

SCOTLAND—KILWINNING B.C. (a) Erection of 60 houses at Redstone site—sixth development, and Parkhill site. (b) John Paterson and D. J. Mitchell Bolton, Town Clerk's Office, Howgate, Kilwinning.

* * *

SCUNTHORPE B.C. (a) (1) 84 dwellings in pairs, blocks of four and terraces of six; (2) 32 dwellings in pairs and blocks of four; (3) 22 dwellings in pairs and blocks of four; and (4) 18 bungalows, on the Riddings estate. (b) Borough Surveyor, Municipal Offices, 34 High Street. (c) 2gns each group. (e) December 10.

SELBY R.C. (a) 3 pairs houses at Cawood and 3 pairs houses at Wistow. (b) G. L. Thompson, 22 Park Street, Selby. (c) 2gns, by cheque. (e) December 1.

* * *

SMETHWICK B.C. (a) Adaptation and extension of Uplands School canteen and kitchen for provision of ladies' cloakroom. (b) Borough Engineer, Council House, Smethwick, in writing. (c) 2gns. (e) November 24.

* * *

SMETHWICK B.C. (a) Adaptations and improvements at Shireland Boys' secondary school annexe and Cape Schools, Cape Hill. (b) Borough Engineer, Council House, Smethwick, in writing. (c) 2gns. (e) November 24.

* * *

SOUTH KESTEVEN R.C. (a) 8 bungalows at Deeping St. James and 6 houses and 4 bungalows at Carlby. (b) Council's Architect, 41 North Street, Bourne, Lincs. (e) December 6.

* * *

SOUTHPORT B.C. (a) Erection of a classroom unit at King George V school, Scarisbrick New Road. (b) Borough Architect, 99/105 Lord Street, Southport. (c) 2gns. (e) December 3.

* * *

STOURBRIDGE B.C. (a) 52 houses, 4 flats and 48 flats on the Wollaston Farm estate. (b) Borough Engineer, Council House, Stourbridge. (c) 3gns. (e) December 18.

* * *

TICKHILL U.C. (a) (1) 17 pairs of houses; (2) site works to housing site of about 4 acres, off Sunderland Street, Tickhill, nr. Doncaster. (b) Council's Clerk, Council Offices, Westgate, Tickhill, nr. Doncaster. (c) 3gns, payable to Council. (d) November 21.

* * *

TRURO C.C. (a) Four old people's bungalows at Chapel Row. (b) City Engineer, Municipal Buildings, Truro. (c) 2gns. (e) December 8.

* * *

TYNEMOUTH B.C. (a) Extension to Civil Defence Headquarters at Upper Pearson Street, North Shields. (b) Borough Surveyor, 16 Northumberland Square, North Shields. (c) 2gns. (e) December 3.

* * *

WELTON R.C. (a) (1) 20 dwellings and site works; (2) roads, sewers, water main, etc., at Reepham, Lincs. (b) Messrs. Wm. Saunders and Partners, 24 Castle Gate, Newark, Notts, or 14 Mercer Row, Louth, Lincs. (c) 3gns. (e) November 24.

* * *

WEST RIDING OF YORKSHIRE C.C. (a) Adaptation of parts of the main stables block to form science rooms at Woolley Hall College. (b) Deputy County Architect, Bishopgarth, Westfield Road, Wakefield. (c) 2gns. (d) November 30. (e) January 14.

* * *

WHITSTABLE U.C. (a) Erection of a prefabricated concrete single-storey building of approx. 2,000 sq ft floor area, together with drainage and ancillary works, for Civil Defence Training and Recreational Centre, Cromwell Road. (b) Council's Engineer, The Castle, Whitstable. (e) November 26.

WORCESTER C.C. (a) 57 houses and 4 flats at Warndon estate. (b) City Engineer, 22 Bridge Street, Worcester. (c) 3gns. (e) November 22.

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WORCESTERSHIRE C.C. (a) Extensions and alterations to Rubery Waseley Hills secondary school. (b) County Architect, 14 Castle Street, Worcester. (c) 3gns. (d) November 23.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

WESTMINSTER. (1) Extensions for Crown Agents for Overseas Governments and Administration. (2) Gt. Peter Street. (3) Holloway Bros. (London) Ltd., Millbank, London, S.W.1. (4) £300,000.

* * *

BASINGSTOKE B.C. (a) 112 dwellings. (2) St. Peter's Road. (3) A. J. Wait and Co. Ltd., New Malden, Surrey. (4) £186,000.

* * *

NEWCASTLE-ON-TYNE CORPORATION. (1) 120 flats. (2) Tyne Quarry. (3) Cussins (Contractors) Ltd., The Drive, Gosforth. (4) £244,882.

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EDINBURGH CITY COUNCIL. (1) Two 10-storey blocks of flats. (2) Moat Drive. (3) James Miller and Partners, 18-20 George Street, Edinburgh. (4) £293,197.

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BROMLEY B.C. (1) 60 flats. (2) Martins Road. (3) Joseph Cartwright Ltd., 9 Streatham High Road, S.W.16. (4) £99,455.

* * *

SOUTHAMPTON B.C. (1) Housing contracts. (2) Thornhill. (3 and 4) A. J. Dunning and Sons (Weyhill) Ltd., Weyhill. £596,469. Reema Construction Co. Ltd., Salisbury. £275,900 and £179,805. H. Stevens and Co. Ltd., Southampton. £87,233 and £72,041. A. E. Knight and Sons Ltd., Southampton. £84,800 and £63,883. Hawkins Bros. (Gosport) Ltd., Gosport. £101,505, £101,505 and £106,861. A. L. Lansley and Co. Ltd., Southampton. £35,293. Unity Structures Ltd., Tavistock Square, London, W.C.1. £22,739.

* * *

HULL CITY COUNCIL. (1) Housing contracts. (2) Great Fields Estate. (3 and 4) A. E. Jenkinson Ltd., Anlaby Park Road North, Hull. £174,534. G. H. Needler, Lambwath Road, Hull. £158,384 and £141,760. F. Bilton Ltd., Wincolmlee, Hull. £253,671.

* * *

ILKESTON B.C. (1) 92 houses. (2) Kirk Hallan Estate. (3) F. Sissons and Sons Ltd., Langley Hill, Notts. (4) £129,000.

* * *

ST. HELENS B.C. (1) 104 dwellings. (2) Mount Pleasant. (3) Gregory Construction Ltd., Hope Street, Liverpool.

* * *

SMETHWICK B.C. (1) 612 dwellings. (2) Re-development Area 2. (3) George Wimpey and Co. Ltd., Chester Road, Castle Bromwich, Birmingham.

* * *

WEST DRAYTON, MIDDLESEX. (1) C. of E. secondary school for London Diocesan Board of Education. (3) J. M. Hill and Sons Ltd., Wembley, Middlesex.

* * *

CARLISLE B.C. (1) 250 houses. (2) Morton Estate, Stage 2. (3) J. Twiname Ltd., Cockermouth. (4) £179,192. John Laing and Son Ltd., Carlisle. (4) £106,268. H. Cartner and Son Ltd. (4) £49,922.

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LEEDS CITY COUNCIL. (1) 36 shops with maisonettes. (2) Various sites. (3) N. C. Bell and Co. Ltd., Frankland Terrace, Leeds. (4) £189,700.

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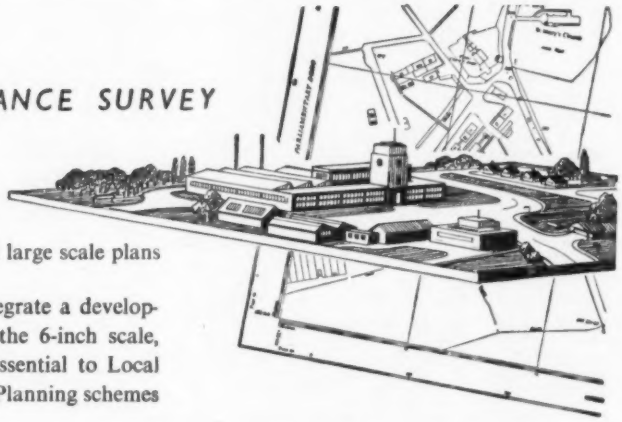

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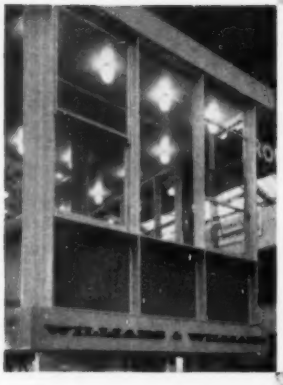

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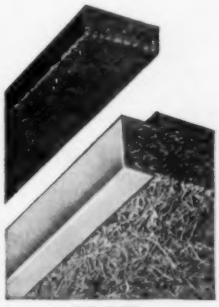

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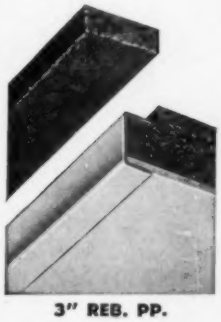

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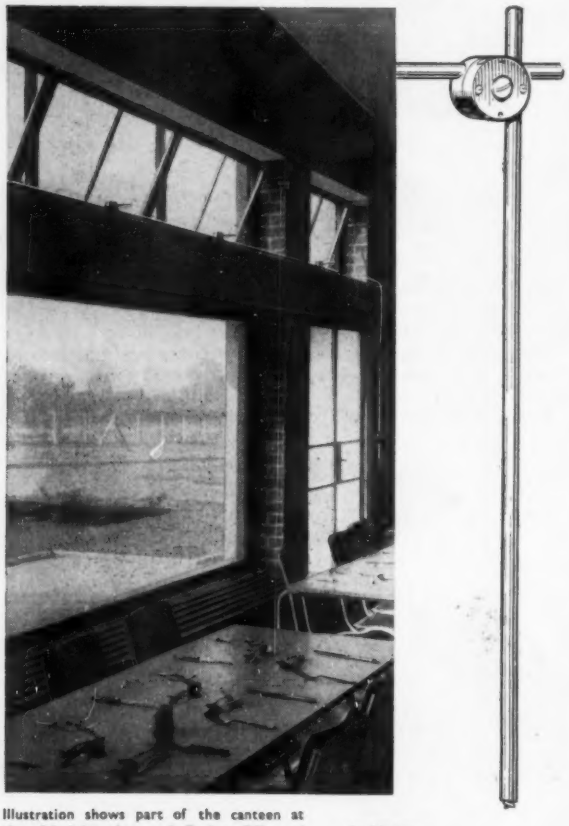

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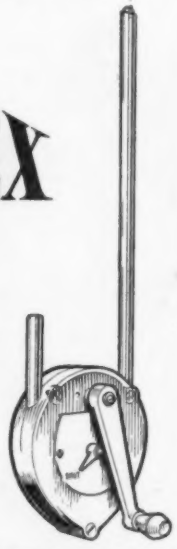

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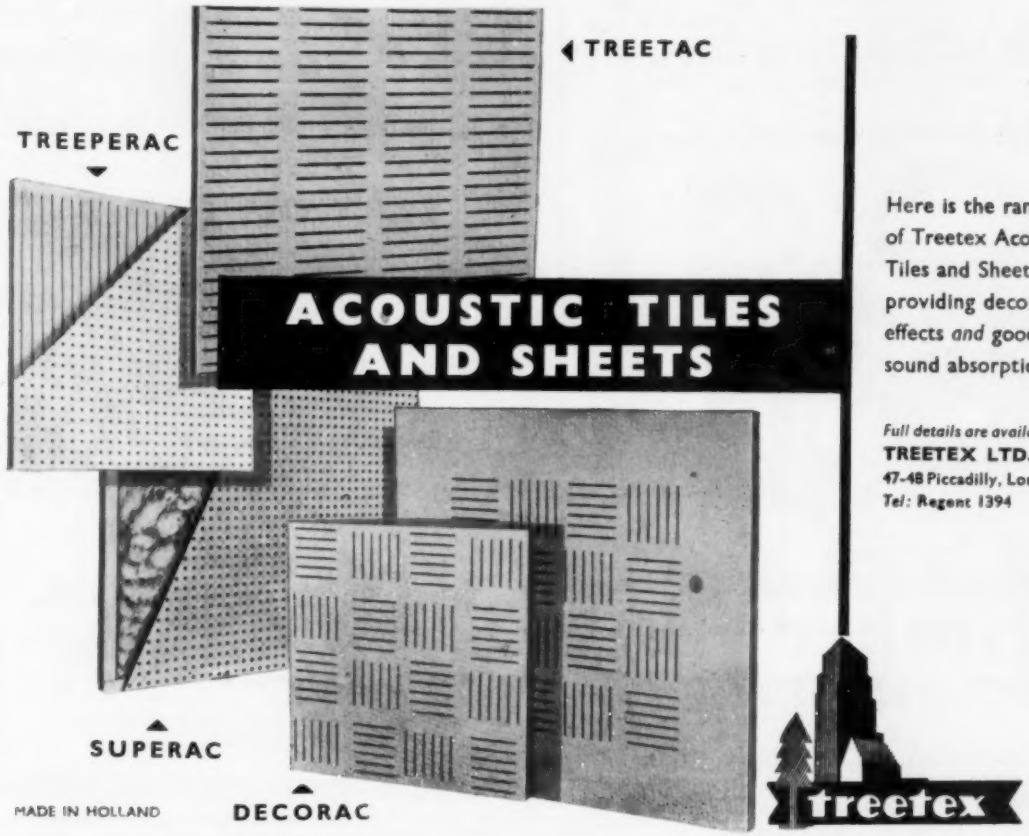

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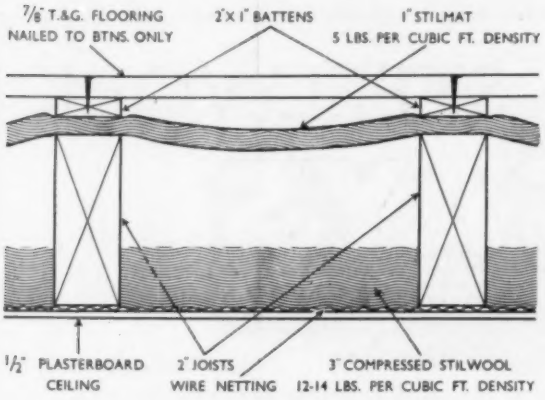
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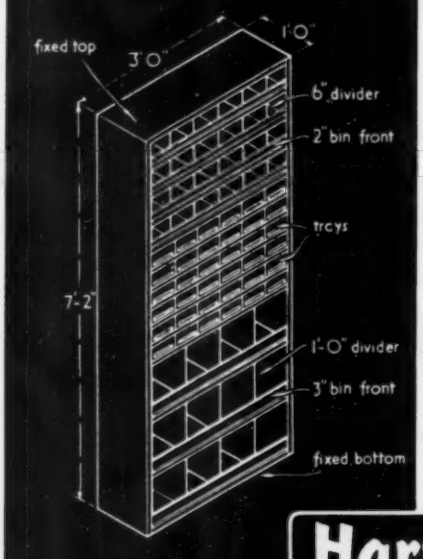

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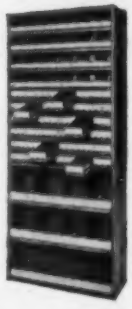

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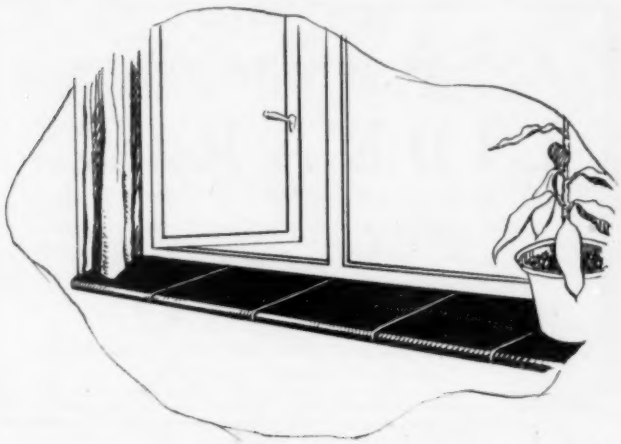

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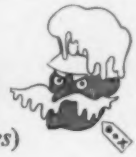

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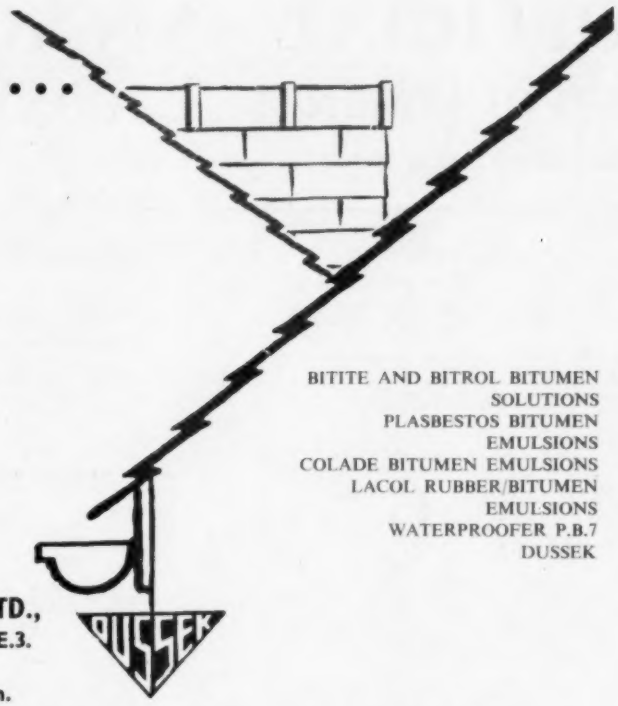

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EDWARD S. SMITH.
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Town Hall,
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J. K. HOPE,
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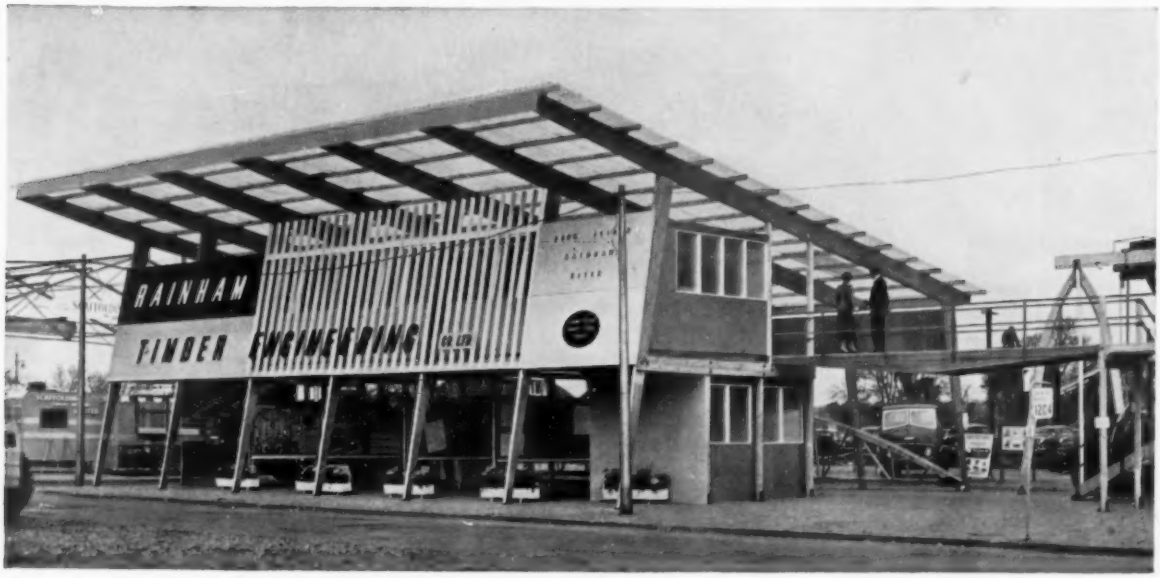

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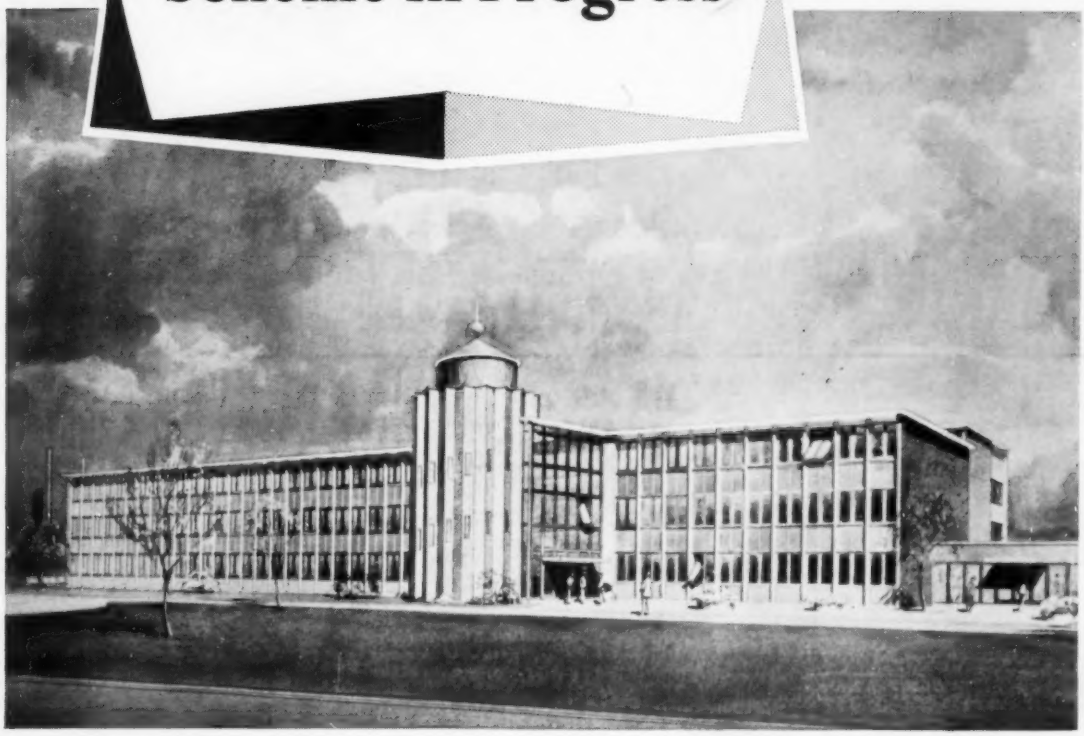

Administration Offices, Shell Haven

THE RAPID CONSTRUCTION of this modern office building for 'Shell' Refining and Marketing Company Limited at Shell Haven is an example of speeding construction by using new methods, new techniques, and by co-operation and team work between client, architect, engineers and the contractors' organisation.

The structural framework of the three-storey main building is in precast concrete units, comprising two 35 ft. 6 in. columns 6 ft. 8 in. apart, incorporating cill and edge beams 13 ft. 4 in. in length.

The building is 294 ft. in length and 43 ft. in width, and the design provides a column free interior.

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